

SCHOLASTIC
COACH

JANUARY, 1959

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AND
EQUIPMENT

ISSUE • 35c

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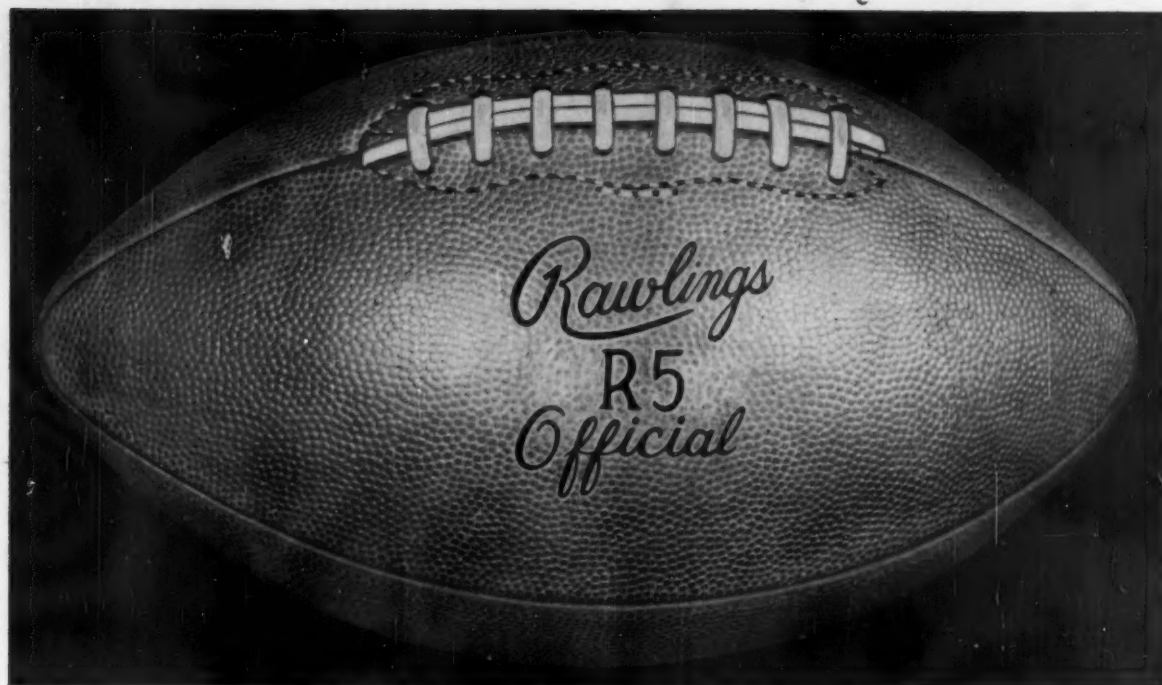
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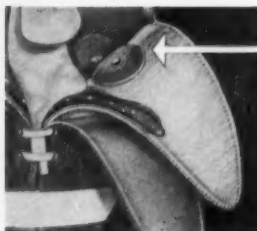
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	12	Blue
	13	Orange

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SCHOLASTIC COACH

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Built to take hard knocks ...



**the
MACGREGOR
E700 SERIES
HELMETS**

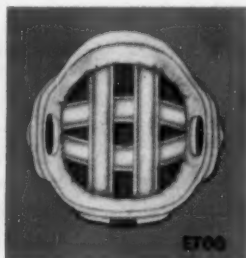


The newest and best in football helmets . . . the all new E700 series by MacGregor! Feather light—they're the lightest known plastic helmets. Exclusive MacGregor Geodetic Suspension cradles head for maximum protection, yet affords greater visibility. A major improvement in design and construction provides greater helmet strength around temples

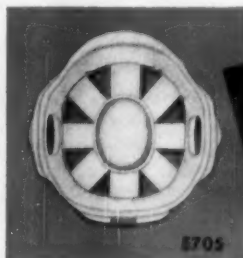
and ears. Hard side blows are absorbed by these new MacGregor helmets. Heat, cold and humidity have no effect on this plastic. Smooth, streamlined styling and hi-fidelity coloring make these the smartest helmets on any field. Give your team the best head protection possible . . . equip them with helmets from the MacGregor E700 series.



E70A



E700



E70S

GEODETIC SUSPENSION (Pat. No. 2,679,046) has been scientifically designed to cradle the head. Eliminates shock from both angle and straight-on blows. Notice, too, in the E70A how Absorblo "Bumpers" over ears give added protection at this vital area.



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uses a 9-point standard for testing and evaluating finishes suggested for use on their products.

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Light reflection
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Point by point, Hillyard TROPHY, the "Tiffany of Fine Wood Finishes", meets or exceeds Association standards. MFMA Approved, also listed by Underwriter Laboratory relating to "slip-resistance".



So superior—Trophy has been selected for every major Basketball Tournament floor.

Above: The Kentucky Fair and Exposition Center, Louisville, Kentucky, scene of 1958-59 N.C.A.A. finals and again in 1959-60.

Trophy's tough, thin coats provide a finish so durable it explodes the old theory of "Babying your gym floor". Now your gym can become a multi-purpose activity center.

These extra thin protective coats give longer wear and do not build into a heavy, thick, yellowing film. When you refinish you use your gym twice as long before sanding or removal of old finish is necessary.

Lightest gym finish known. Its non-glare matte finish never darkens—won't check, chip or peel. Trophy is the "Finish for Champions".

Ask the Hillyard "Maintainer®" for expert advice on care of your gymnasium floor, all floors in your school. He'll gladly help you with a floor care program that will mean real savings in your budget. He's "On Your Staff—Not Your Payroll".



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Seeds for the athletic plant

MR. F. D. R. was in the middle of his second presidential term, Hank Greenberg was banging baseballs out of sight, and Jock Sutherland and Bernie Bierman were the lions of the gridiron—way back when *Scholastic Coach* jumped into the world of building and equipment.

Up until then, our schoolmen had practically no recourse to the latest developments in the field. They had to ferret out their information by word of mouth, catalogues, and correspondence, and thus seldom got exactly what they were looking for.

To fill this aching void, our editor instituted a New Equipment department in October 1938 and followed this up three months later with our first Building & Equipment Issue.

These two departments, *the first of their type in an athletic periodical*, have grown with the years and are now among the most treasured features of *Scholastic Coach*.

It's fascinating to view some of the items that appeared in our first New Equipment column: a basketball shoe featuring a sharkskin scuff-proof tip; a woman's softball shoe; a special rubber kicking toe for football shoes; and a time study board with a stopwatch holder attached.

In the facility field, it's similarly revealing to contemplate the enormous progress made in the past couple of decades. Take the matter of floodlighting, for instance. In our first major article on floodlighting (June 1938), we reported that the average plant boasted a total output of 51,222 watts.

Compare this with the figure reported in our national survey some years ago: "Total wattage ranged from a low of 51,000 to an astounding high of 418,000, with a mean of 140,146."

In other words, the modern night-lighted plant boasts nearly three times as much light as its 1938 counterpart!

Other Building & Equipment "firsts" of which we're justly proud include:

1. Modern field houses.
2. Gym and field sound systems.
3. Building a cinder running track.
4. Telescopic or folding gym seating.
5. Three-in-one gymnasiums.
6. Laminated-arch gym structures.
7. Playground surfacing.
8. Fan-shaped backboards.
9. Construction of rifle ranges.
10. Functional game areas.
11. Rubberized indoor running tracks.
12. New look in locker and shower facilities.
13. Double-tier gyms with folding gym seats.
14. Visual aids in coaching.
15. Maintenance of the athletic plant.
16. Weatherproof tracks.
17. High school training rooms.
18. Better turf for athletic fields.
19. Filming your games in slow motion.
20. Use of the stroboscopic camera.
21. Tape recorder as a coaching aid.
22. Portable basketball floors.
23. Dual running tracks.
24. Fiberglas, wonder equipment repairer.
25. Radiant-heated natatorium.
26. Cinemascope game movies.
27. New "grasstex" running tracks.

Which brings us to special Building & Equipment Issue No. 21 . . .

WHEN Dr. Don Veller, the former football coach at Florida State who's now assistant athletic director, sent us his compendium of common-sense principles in modern coaching, we felt we had a gem of the purest ray serene.

And it's nice to know we were right. Shortly after the article appeared in October, Sul Ross State College (Tex.) asked us for reprints to distribute to all its physical education majors, while the Belmond (Iowa) Community School requested a supply of reprints in order to "make it required reading for our coaches before each sport each year."

And just the other week, Valparaiso U. (Ind.) informed us that "this article is a credit to both Mr. Veller and your organization. The comments from our coaching staff were nothing but commendable, and we'd like a copy of it for class use. May we also commend *Scholastic Coach* for the moral and educational principles which it has consistently represented."

WHENEVER the fabulous "Ice Capades" hits town, we always cut a figure-of-eight to the nearest box seat. Not that we're devotees of ice shows. Hardly. But there's an act in it that continually stupefies us.

We refer to the Forgie & Larson comic badminton game on skates! We've been watching the boys do it for 14 years, and we still feel they're doing it with mirrors. We can't get over their incredible timing and magnificent assortment of trick shots from every conceivable angle.

To the spectators who clap their hands raw, it's just a funny bit. To the sports technicians—and that includes us—it's considerably more. It's a consummate athletic performance dressed up in a comic format. And the management, praise the lord, is finally seeing it that way too. For the act, after 13 years, has finally been moved to a featured spot at the close of the show—where it belonged in the first place.

It couldn't happen to a more deserving guy, Hugh Forgie, the genius behind the act. Hugh, an old

(Continued on page 54)



Right here

Y. A. TITTLE*

knows Wilson does it best!

The ball is snapped. Tittle pivots. Hugh McElhenny moves into the line to take the quick hand-off. Y. A. shoots out the hand-off and...right here, where the quarterback needs it most, is where Wilson's great TD football does it best.

The Wilson TD is truly the "quarterback's ball" as coaches everywhere have discovered. Here is the ball with "positive contact" leather that coaches and players have found they can kick, throw, carry, and hand-off with complete confidence. It's the ball with the grip that's "tanned-into" the leather, the bowl game "ball of fame."



*Y. A. Tittle and his running mate in these photos, Hugh McElhenny, of the San Francisco 49er's, are members of the famed Wilson Football Advisory Staff.

**Win
With Wilson**

WILSON SPORTING GOODS CO., CHICAGO (A subsidiary of Wilson & Co., Inc.)





Sioux Falls' Howard Wood Memorial Field packs all of its 10,148 seats between the goal lines!

South Dakota's "Field of View"

HOWARD WOOD MEMORIAL FIELD is the public school athletic plant for the Sioux Falls school system. It includes approximately 20 acres of ground, with a game football field, cinder track, stadium, and three practice football fields—all inclosed by a Cyclone fence. In addition are about 10 acres of parking area, belonging to the city of Sioux Falls, which the Board of Education has gravelled for parking 1,150 automobiles.

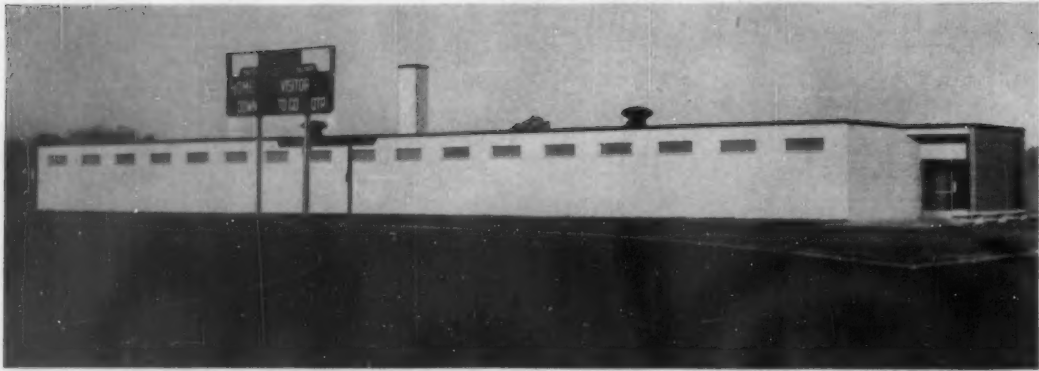
Located about two and a half miles from downtown Sioux Falls, where the high school is located, it caters to two high schools and two colleges who play all their home football games on this field.

Grandstands: Seating for 10,148 persons is provided by two concrete pre-fab grandstands. The supporting structure of reinforced concrete was

View of stand showing last riser partly formed and beginning of tread and riser section.

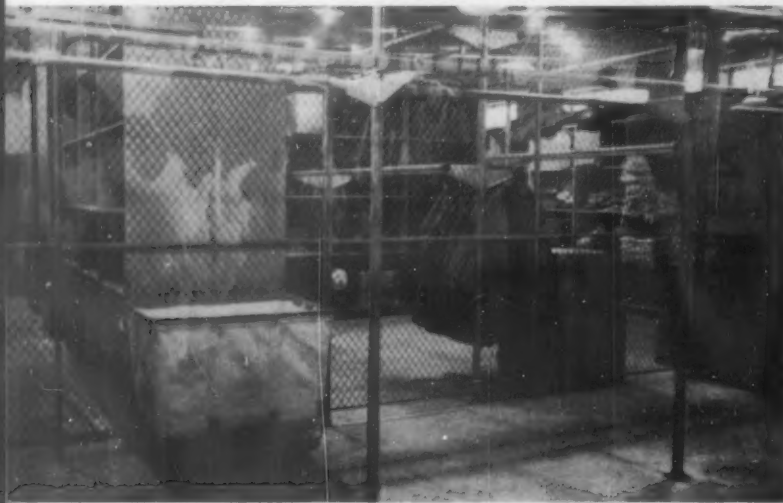


By **WALLACE M. DIEHL**, Athletic Director, Washington Sr. H. S., Sioux Falls, S. D.

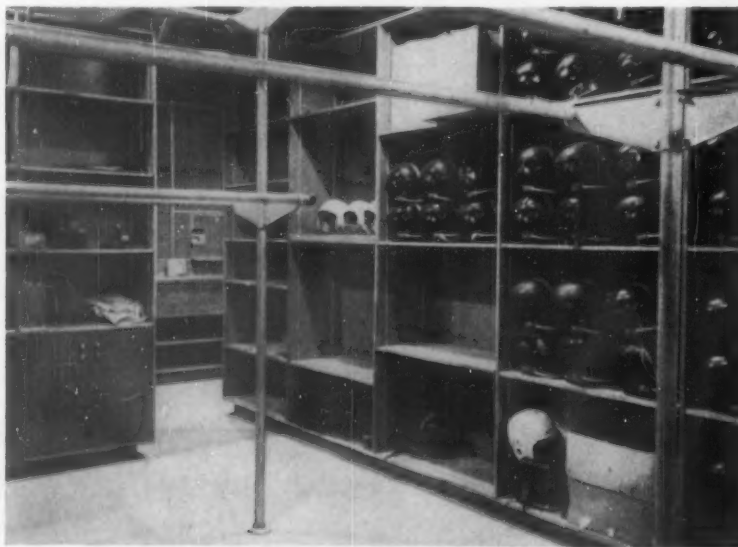


Haydite block service building 60' wide x 142' long, featuring dressing accommodations for

over 200 boys. All the units observed on this page are housed in this handsome building.



View from drying room into the equipment storage and issue room.



View of equipment room toward issue window, showing ultra-modern adjustable shelving and extensive, sturdy racks for equipment hangers.

poured on the site, while seat risers and threads were pre-cast at a local concrete products plant. These were trucked to the field and lifted into place by a crane.

After considerable study, the stands were designed with a 13-inch rise on the first 15 rows, and a 14-inch rise on the last 14 rows. The first row is 4 feet above the ground level and 18 feet back from the outside curb of the track.

This arrangement provides excellent sight lines from all seats for both football and track. The entire runner in the outside lane on the track is visible from all seats. All seats are between the goal lines.

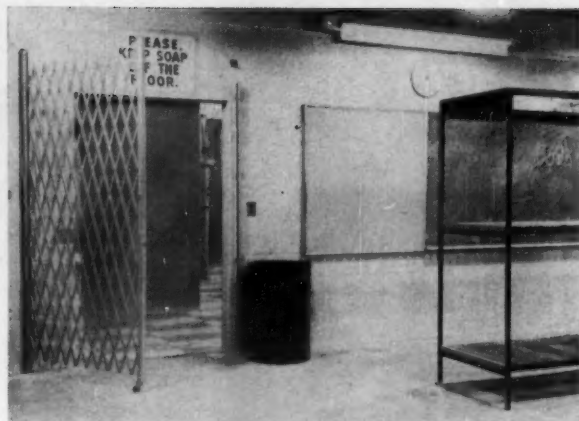
All traffic in the stands is up and down the aisles between sections. Sections are planned so that all rows are only 14 seats long, with all aisle seats numbered 1 to facilitate ticket selling. Seats are made of a special Alaska spruce, with seat numbers branded at 18-inch intervals.

Vomitories lead under the stands to the toilet and concession buildings. Identical toilet and concession facilities were built under both grandstands, with the area under the stands having black-topped walkways.

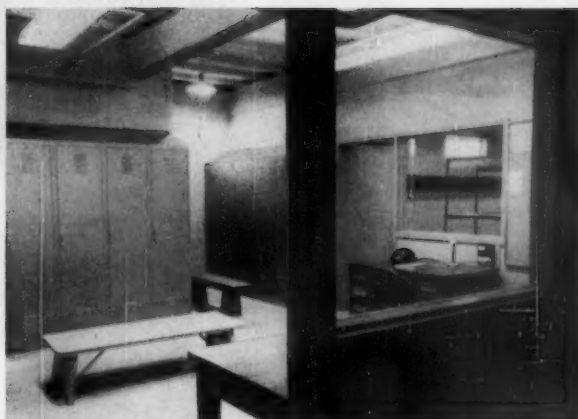
The Press Box is made of 18-gauge galvanized steel exterior walls, fastened to a steel supporting structure, with concrete floors on both decks.

It contains 6 broadcast booths, a press box to accommodate 10 persons, a public address booth, a timer's booth, a home and visitors spotter's booth, a photographer's booth to handle 4 cameras and/or a television camera.

All have separate entrances from the rear, and are equipped with sliding plate glass windows which may be opened wide if desired.



How varsity room leads into shower; note folding gates, bulletin board, chalk board, movie screen.



Coaches office from hall, with shower and toilet facilities in tiled room behind lockers at left. Mike for the building's p. a. system is on desk. Large windows help coaches supervise the dressing rooms.

Some seating space was saved in the stands by having the walkways and stairs from first to second floor overhang at the rear of the press box.

Broadcast booths are equipped with standard electric and telephone connections, overhead lights, and fluorescent counter lights for use during broadcast. Spotters' booths have self-powered telephones to the benches at either side of the field. Photographer's booth has both 110 and 220 electrical outlets and television outlets.

The public address system has a microphone in the booth proper and connections at the 50-yard line on both sides of the field, for ceremonies. A record player for all speed records is built in the public address unit.

A phone system is also connected in the public address booth with an intercom system between the ticket booths, press box and the coaches' office in the service building. For track meets, an additional line is run from the field to the press box.

The timer's booth has controls for the scoreboard. The board can also be operated from the sideline if desired, and has a track timing pack so that unofficial times can be posted for spectators.

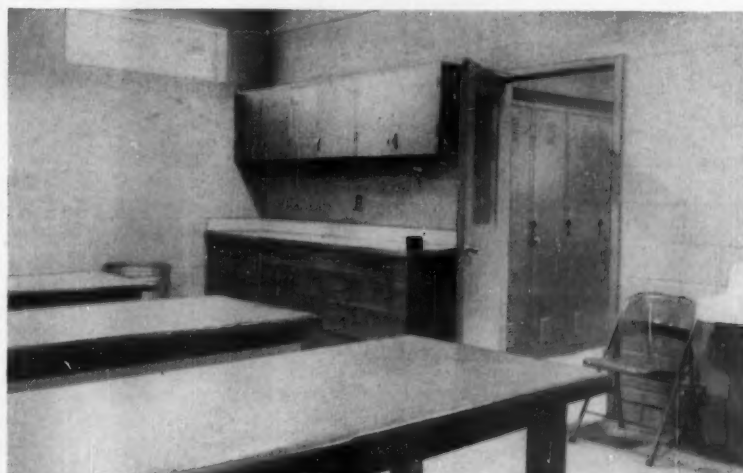
The Service Building is a haydite block building 60 feet wide and 142 feet long, with dressing accommodations for over 200 boys. Features of this building are:

Heating is by radiant coils, cast in the original concrete floor slabs.

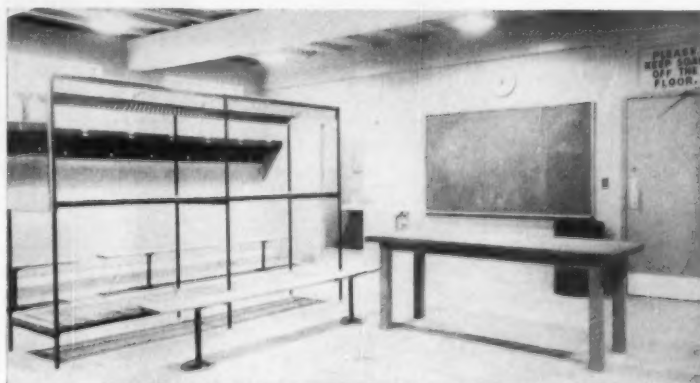
Ventilation is aided by 2 power flow roof ventilators.

Complete laundry, including 50-pound washer, extractor and gas dryer.

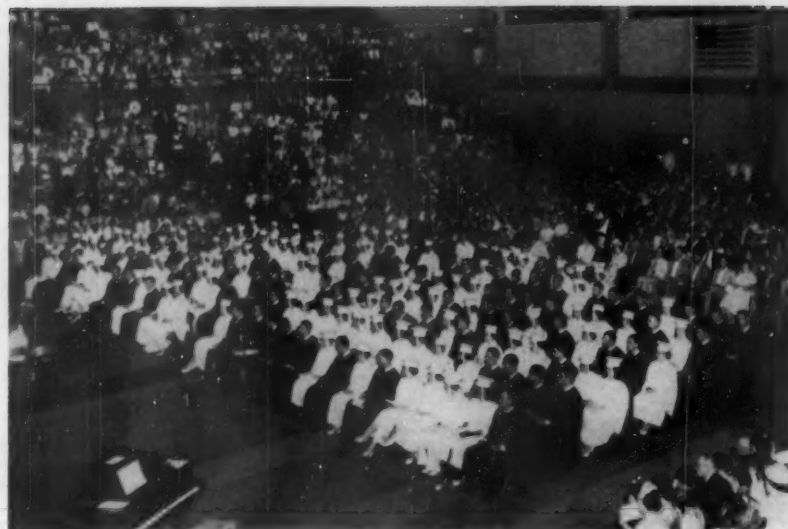
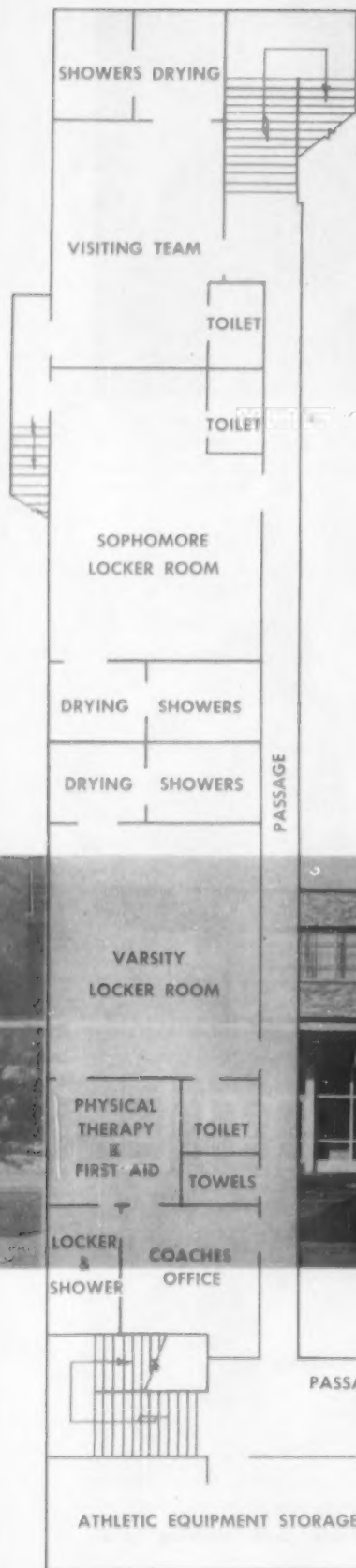
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Training room showing rubber-padded training tables, sink, and elaborate cupboards. Not shown are two whirlpool baths and heat lamp.

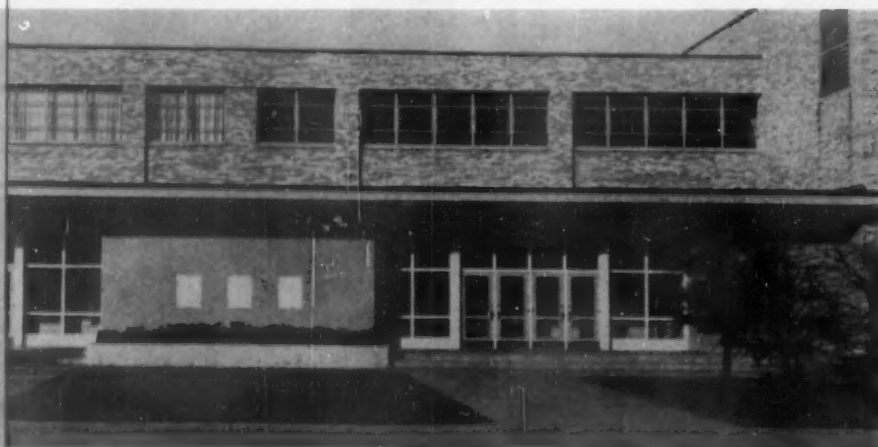


Visitors dressing room, showing toilet (left corner), door leading to showers (right), padded training table, and clothing racks.



Gym-auditorium provides setting for many assemblies and dances during year, as well as Baccalaureate and Commencement ceremonies.

Twin-Balconied Gym-Auditorium



Outside entrance to West Senior gym, located on east side of building.

By MARY CASTLE

WEST SENIOR HIGH SCHOOL, Aurora, Ill., completed in 1953, was constructed at a cost of \$2,063,800 for an enrollment capacity of 1000 students.

Keeping in mind the suggestions made by the teaching staff and a study of community needs, the architects, Childs and Smith, blue-printed a school plant that was modern in design, practical, functional, and beautiful. Now going into its sixth year of use, the building has lived up to all of the promises of the blueprints.

The basic physical education plant, built at a cost of 99½¢ per cubic foot, includes a gymnasium-auditorium and playfields. Also included are boys and girls locker rooms, closed storage areas, staff offices, and a hard-surfaced, lighted parking lot providing space for 218 cars. Additional parking space in dry weather comes from the girls recreation fields.

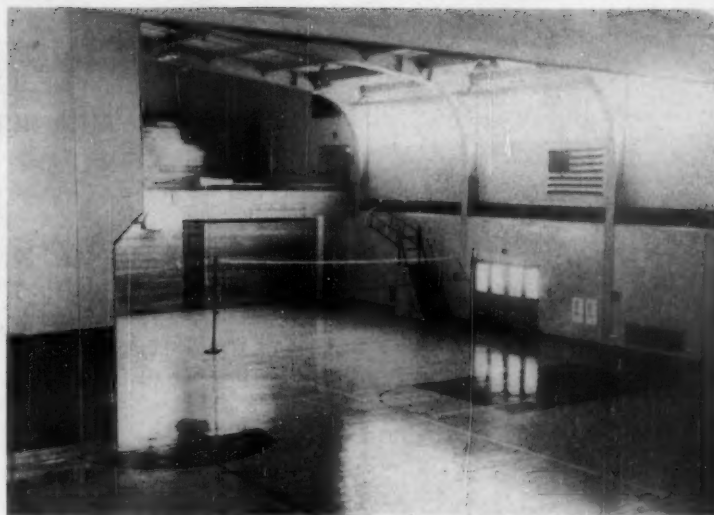
Future plans for the school include the addition of a swimming pool and separate auditorium. Swimming facilities at the new YMCA are being considered for present use.

The incorporation of an auditorium unit interferes little with the conduct of most physical education activities. The lay-out provides an area of 112' by 104' for instruction—adjacent to which are two separate staff offices (girls is 11' by 14.8', boys is 16' by 14.8') and two closed storage sections off each office (girls is 12' by 7' and boys is 10' by 6').

The activity area is kept clear by having all the equipment movable. That includes the basketball backboards. The floor is marked for basketball, volleyball, badminton, and shuffleboard.

Rollaway bleachers on both sides and two upstairs balconies furnish a seating capacity of 3,200, and provide the maximum usable floor space.

An electric door provides a dividing partition that allows for unit
(Continued on page 66)

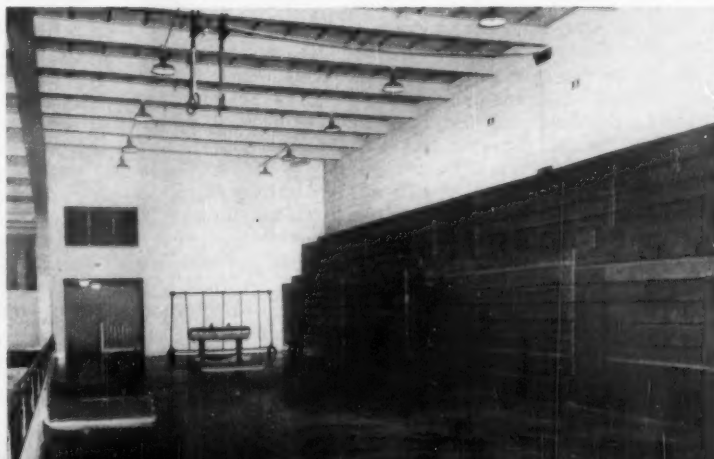


Large custom-built electric door, which can be opened or closed in about four minutes, divides gym into two units for boys and girls.



Half of gym with downstairs rollaway bleachers in place. Draperies on windows and shades on doors darken gym for showing of films for assemblies and phys ed classes. Note acoustic ceiling and lighting.

View of one of upstairs balconies; 25' wide by 104' long, this area provides a teaching station where most apparatus classes are held.





ASPHALT COMPOSITION

By **DAVE RANKIN**, *Track Coach, Purdue University*

ASPHALT all-weather surfaces for field events are becoming increasingly popular every year. The surface has been well-received by high school and college athletes, and the performances on it are equal to that on any other surface now being employed.

The idea of using asphalt-composition surfaces for field events goes back some years, but early experiments did not prove satisfactory. Ed Weir, former Nebraska track coach, worked with various formulas before arriving at a satisfactory surface that would withstand weather and use.

The special-formula asphalt-top surface was introduced to the high jumpers competing in the 1953 NCAA meet in Lincoln, Neb., and elicited many contrasting statements from the high jumpers and

coaches. The general favorable comment was that the surface had its possibilities and perhaps could be used for all field events. The next move was for other schools to adopt the surface and justify its use.

During the summer of 1953, the topic of asphalt surfaces for all field events was thoroughly discussed with various people in the Purdue University Highway Research Department. The comments were favorable enough to influence the Purdue athletic department to construct asphalt areas for the high jump, broad jump, pole vault, shot put, and discus. The construction was completed by mid-October of 1953 as part of the new outdoor track and field.

The purpose of the asphalt mat was to provide an answer to the ever-growing demand for a surface

All-Weather Surfaces

GRASSTEX

By **KEN DOHERTY**, *Director, Penn Relays*

WHEN you come to the Pennsylvania Relays next April, or to the USSR-USA dual meet on Franklin Field next July, take a moment to focus your binoculars on the groundsmen and the meet director. If you're puzzled by their rested and unworried faces, shift your gaze to those dark-green, table-smooth runways for the pole vault, high jump, and broad jump.

They're made of "Grasstex," the trade name for a resilient asphalt and cellulose composition which is likely to revolutionize jumping. In the Penn Relays, these events will average over 50 competitors each, who'll make a total of over 300 attempts. Yet when it's all over, the take-off surface will still be as smooth as a swimmerless swimming pool!

Rain prior to the meet holds no worries at all; even rain during the

competition is a minor handicap insofar as the take-off is concerned.

By way of contrast, consider the situation in 1956. To secure the best possible surface for the high jump, we had brought in special clay. And to maintain correct moisture conditions, we had bought expensive canvas covers to keep out both rain and sun.

Each night for weeks before the Relays, we had watered the runway "just right," then covered it until practice time the next day. Often we'd check it in the morning to see if it needed a little airing.

Yet all this care was wasted when a hard downpour just as the event started turned the perfect clay to impossible mud. Before the event could proceed, we had to scrape off the top two inches and bring in loads of dry cinders to mix with the remaining wet soil.

Our efforts succeeded, for the high jump was finally won at 6-6. But what an endless fussing and fretting and outlay of labor! It would be most interesting to know just how many man-hours at union wages are annually added to the cost of so-called inexpensive cinder or loam runways.

Now, through the use of hard surfaces such as Grasstex, all such problems are removed. Grasstex, manufactured by the American Bitumuls & Asphalt Co., with branch offices in various parts of the country, has been used for years as an all-weather surface for tennis courts. It's entirely skid-proof for rubber-soled shoes and certainly for needle spikes such as are commonly worn on indoor board tracks.

As an indication of its durability, the U. of Pennsylvania has used Grasstex since 1954 on the concrete surfaces just outside its football dressing rooms to prevent football cleats from slipping. Despite such rough use it's still effective, though marred of course by the 220-pound cleats.

that would remain constant during practice and competition. The surface would have to withstand variable weather and seasonal temperature changes, while the maintenance cost would have to be negligible in order to justify the original outlay.

How has it worked out at Purdue? The forthcoming outdoor season will be the sixth year that the surfaces have been in use *without any maintenance or repair!* The surfaces are the same as originally constructed with the exception of a little wear from constant use.

The construction of the asphalt mat should be entrusted to a reliable company. The desired results should be thoroughly and carefully explained to the company foreman. The better understanding the foreman has of your desires and rule requirements, the more satisfactory the results.

Since the local weather conditions will influence the sub-surface, it's advisable to confer with civil

engineers in your area. The Purdue sub-surface was based on a frost line of 30 inches.

It's necessary to first establish a finish grade level for each mat area. Being a permanent type footing, the grade levels are necessary to conform the finished project to the rule requirements and not necessarily the local ground contour. It's not necessary to crown the runways, as the water is easily broomed off and any rain water that accumulates on the runway is of no hindrance.

Our asphalt areas were started eight inches below the finish grade level to allow for five inches of No. 3 crushed graded stone, two inches of asphalt binder, and one inch of the special formula mix for the top surface.

The five inches of crushed stone helped give the binder and top surface the stability that was necessary to keep the area from heaving with the freezing and thawing. The crushed stone was rolled and packed to a near level grade.

The two inches of asphalt binder is technically a bituminous concrete mix with three-eighths inch maximum size aggregate. If the asphalt binder is leveled to the appropriate grade, the top dressing will be of more uniform thickness when leveled to the finished grade. The crushed stone, asphalt binder, and the top dressing were rolled with a five to seven ton roller.

Again let me emphasize the importance of the finished grade level. It's advisable to be present when the top dressing is being worked to grade. The crushed stone and asphalt binder can be started and terminated at any point, which might happen in ending a day's work. But once the top surface is started on an area, the entire area should be completed. The lapping of the top surface is not only difficult, but distracts from the overall appearance.

The top dressing is a hot mix and a hot day will help the rakers work the dressing to the proper
(Continued on page 72)

for Field Events

This Grasstex is the same material used by Coach Percy Beard on the entire outdoor quarter-mile track at the U. of Florida, which has proven most effective and which was described in great detail in the November 1958 issue of Scholastic Coach.

There's no need to repeat the description here. But a summary of our experience at Pennsylvania should give support to its claims and maybe add a little that is new.

The method used by our contractor included:

1. Lay a curb of brick cemented end to end on the regular cinder-loam runways, no excavating.
2. Spread 3¾ inches of asphalt composition on the runways within these curbs.
3. Cover this and the bricks with ¼ inch of the special Grasstex composition.
4. Seal the entire surface with a thin coat of green Mastic Weather-coat.

Surfaces were graded for rain run-off. In the case of the high jump, the surrounding turf was

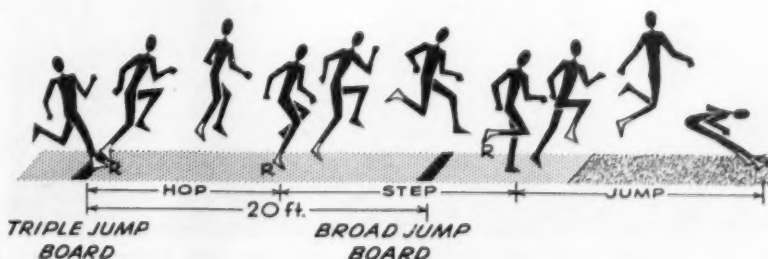
graded in order to hide the bricks completely. Through his many years of experience in laying tennis courts, the contractor assures us that this method of construction will resist the effects of all Philadelphia winter frosts. Colder areas may need a different approach.

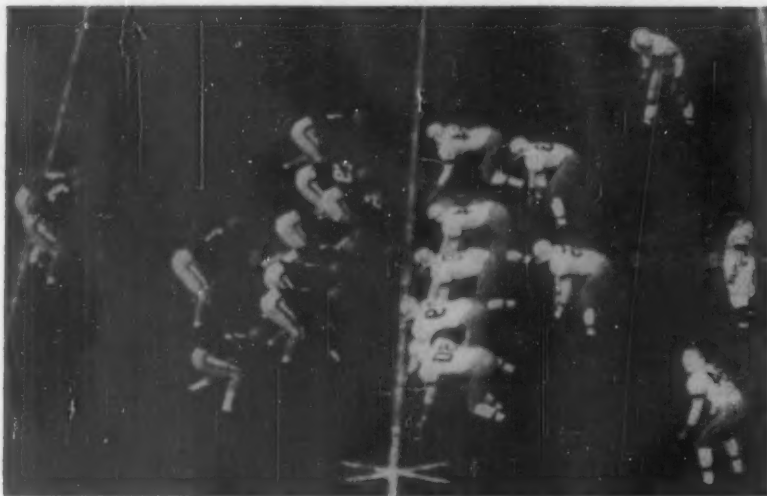
On Franklin Field, the pole-vault and broad-jump runways extend along the football sidelines and therefore make excellent flat and clean surfaces for football sideline benches. For at least this year, we've used boards to protect them. However, the occasional cleat mark is

hardly noticeable, and we've been told that any necessary repairs can be done easily by our own grounds-men.

In contrast to Florida, we've used Grasstex on our high jump area. It forms a semi-circle limited by the football field to a satisfactory though minimum radius of 22 feet. This permits four strides only. It would be better of course if all strides could occur on the Grasstex, but this would greatly increase costs.

We've had four high jumpers including the 1957 Ivy League co-
(Concluded on page 63)





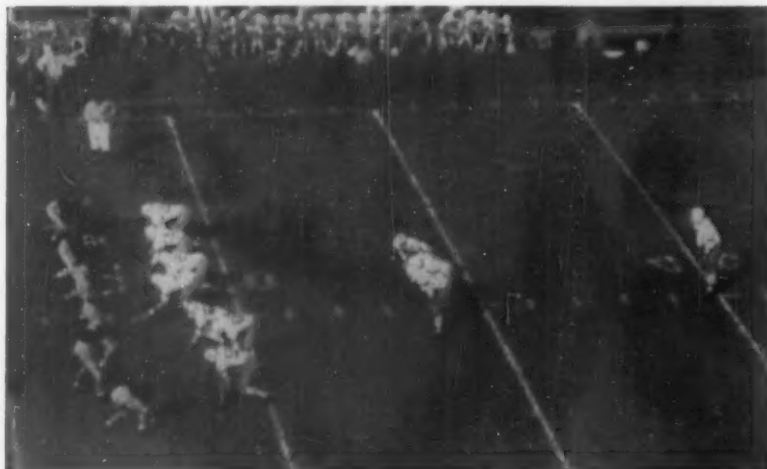
Framing the ordinary play to get most men possible into the picture.

Football "Shooting" Hints

IF I WERE writing this article a decade or so ago, I'd probably have to "kick off" with a brief on the values of game films—how they expose every play in pitiless detail, how invaluable they are in preparing both your offenses and defenses from week to week, their carry-over

scouting benefit from year to year, and their marvelous value in promoting the team to outside (community, boosters, etc.) groups.

Today, such briefs are unnecessary. Our high schools and colleges need no convincing. Practically all of them now are filming their games.



Framing the punt, with defensive line on one edge and kicker on other.

By DICK WINIK

Official Photographer, N. Y. Giants

Unfortunately, the great majority of schools cannot avail themselves of the ultimate in equipment. Most budgets prohibit the use of such neoteric advances as the zoomar lens, cameras with twin film chambers, the anamorphic lens (cinemascope), etc. So we'll present two basic shootings set-ups—one for limited budgets and the other for maximum budgets.

Minimum Set-Up:

1. A 16-mm. camera holding 100' of film.
2. 400' of film.
3. A sturdy tripod.
4. A light meter.
5. At least two lenses—a 1" lens for kick-offs and plays immediately in front of the camera and a 2" lens for plays toward either end zone.

A word about point 2: Though you can cover a game with 400' of film, you need at least 800' to do a thorough job. With just one camera, you have to stop for reloading purposes, thus missing several plays each time. For thorough coverage, you need two cameras or a camera with two or more film chambers. (We employ an Eastman Kodak Cine Special.)

Ideal Situation (which we observe for filming college and pro games):

1. A sturdy professional tripod to keep the camera level and to assure smooth panning and tilting.

2. A Cine Special camera with at least two 200' film chambers and one 100' film chamber.

3. A 25 to 100-mm. zoomar type lens, eliminating the necessity of using two, three, or four different lenses.

4. A light meter.
5. At least 3,200' of film—either 1,600' of Eastman Plus X or DuPont 930 for sunny days and 1,600' of DuPont 931 or Eastman Tri-X for dark days or night games. This will prepare you for all emergencies.

Though fast film can be used for all conditions, in normal sunlight it won't give you the same results as slow film. It doesn't furnish the clear, crisp picture that slow film does; it's more grainy. Employing it in bright sunlight necessitates the use of filters.

Tips for High School Photographers:

1. Arrive at the game site in plenty of time to check thoroughly every piece of equipment.

A Hit!!

Wilson Uniforms and Equipment— The Quality Hit in Every School and Every Conference

UNIFORMS • Performance patterned and taper cut...two reasons why Wilson uniforms have made Wilson the No. 1 Tailor in Baseball. Available in a range of flannels and patterns, Wilson uniforms set the pace in college baseball—and all baseball—for fit, appearance and wear.

BASEBALLS • In a baseball, where quality counts, Wilson wins. The finest centers, yarns and choicest covers are combined to produce the greatest playing ball within the precise tolerances established by the official rules of Baseball.



GLOVES • Baseball's finest glove and mitt line carries the Wilson label. And the star of this team is Wilson's great A2000. Here's the glove with extra reach, no rebound, snap action, and triple-lock web.

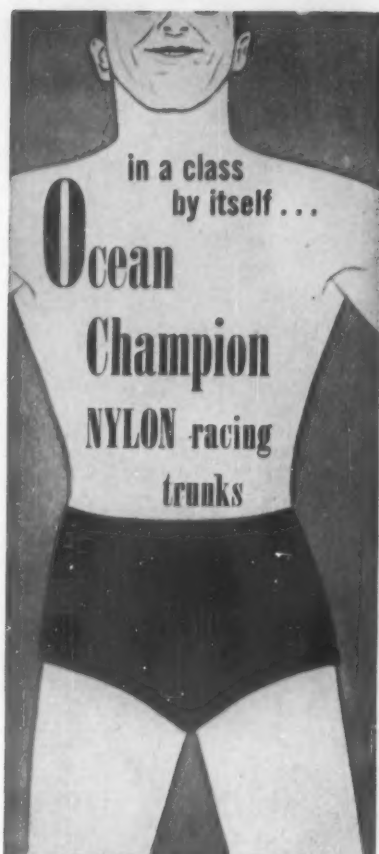
SHOES • Your ball club will move quicker, with fewer foot problems, in Wilson shoes. The secret's in the Wilson last...the last that's first in baseball shoes. There's a wide range of models in the lightest of upper leathers and the most durable of constructions.



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The most popular Nylon racing trunk in the country. Popular with swimmers and top teams because it's **5 ways better** . . . and popular with schools everywhere since its high quality features mean longer wear, **lower cost** in the long run. Let us **PROVE** to you that Ocean Champion is better . . . 5 ways better, and is the trunk for you!

ORDER NOW . . .
and compare!

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\$36.00 per doz.
Sizes: 22 to 38

Black • Royal • Scarlet
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SEND FOR CATALOG C
OF COMPLETE LINE



**OCEAN POOL
SUPPLY CO.**

America's headquarters for ALL
swimming and pool accessories

2. Choose a location as high up and over the play as possible. Getting over the play furnishes a clear picture of the vital line spacings. Lehigh and Princeton offer superb press facilities, enabling the photographer to get up high but not too far from the sidelines. Try to set up near the 50-yard line with the sun behind the camera (if possible).

3. Check the light continuously with a light meter. On days when the sun keeps going in and out, take a light reading when the sun is out and another when it's obscured by clouds so that you won't have to keep checking the meter during the game.

4. Check your camera for parallax to make sure your range-finder is not distorting the image you want to record—so that you get what you see through the finder.

5. Make sure to start shooting the play soon enough. Don't wait until the ball is snapped. Start the camera long before the snap in order to catch the original defensive set-up, how it changes or adjusts, and to discern the count (long, short, or change).

6. Frame the play to fullest advantage, getting the most men possible into the picture. Align the backside of the offensive backfield against the frame edge and include as much of the defense as possible, encompassing at least the linebackers.

7. On a kick, get both lines—the defensive line along one edge and the kicker on the other. We've been doing this upon Coach John Steigman's suggestion. The Rutgers coach always wants to see if the snap from center is okay and that the ball is handled correctly. Stay on the kicker to make sure there's no roughing-the-kicker and then pan along the ground (not in the air) to reach the receiver as the ball gets there, checking for a fair catch, etc.

8. On pass plays, try to keep the passer on one edge of the frame and get as much of the downfield as possible. If using a zoomar, open the lens to gain as wide a view as necessary to show the pass patterns and downfield receivers.

9. Make sure to wind the camera after every play.

Choice of Photographer: If the budget prohibits the employment of a professional, look for an amateur with a good basic knowledge of the game and the camera equipment—preferably a former athlete with good coordination and reflexes, who can anticipate the action.

Cinemascope: This is one of the latest trends in football filming. By attaching an anamorphic lens to the regular telephoto lens, you can catch

THE FIRM of Winik Films, of which the author is vice-president, is one of the great pioneers in sports movies. Started by Les Winik over two decades ago, it's now probably the top sports film specialist in the land. Winik crews cover the Princeton, Lehigh, Rutgers, Kings Point Merchant Marine, Wagner, and N. Y. Giants football games . . . plus the activities of the N. Y. Knickerbockers (basketball), N. Y. Rangers (hockey), and I. B. C. (boxing) . . . plus the games of most of the college basketball teams visiting Madison Square Garden . . . and also prepare all sorts of special film subjects for industrial and TV use. Dick himself has been shooting the Princeton games for the past seven years and the N. Y. Giants games for the past 12 years.

about 2½ times more of the horizontal action without sacrificing brilliant close-up detail.

Advantages:

1. Furnishes 2½ times more horizontal coverage, affording that much greater detail.

2. Enables you to glean much more detail on pass patterns, kicking situations, and all-around play.

3. Presents a wider, more entertaining picture.

Disadvantages:

1. Cost; anamorphic lens sells from \$115 to \$165.

2. Must send lens along for outside showings (since lens must be attached to the projector for viewing purposes).

3. Under many anamorphic setups, you can't switch lenses. You must shoot with one focal length lens.

4. You must be more critical since you're focusing two lenses—the regular and the anamorphic.

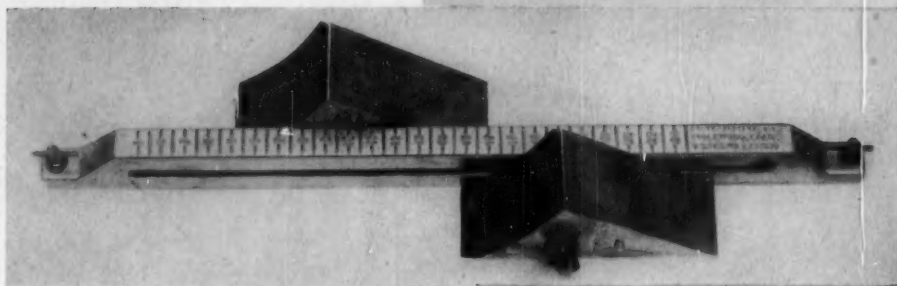
5. Very few accurate finders are available for anamorphic lenses.

Film Processing: Good news for the football coach is the growing number of film processing labs which can supply speedy service during the season. In many cases, if fortuitously located, you can get overnight service.

In sending your film to the processors, it's advantageous to include a note on the conditions under which the game was shot. If the film is overexposed, little or nothing can be done about it. If under exposed, the film can be developed at a slower rate than normal, thereby bringing out the images.

Perfect Starts from the Perfect Block

Arnett Starting Blocks



WHY ARNETT LEADS THE FIELD

1. Built for standardization, better starts, superior performance, and less delay.
2. Made of aluminum alloy, calibrated for individual setting . . . adjustable to all types of starters (right or left-footed, tall or short) in only 3 to 9 seconds.
3. The choice of every U. S. Olympic Team since 1948!
4. Official starting blocks for the country's greatest Relay Carnivals and Meets.

Penn Relays • Compton Invitational • Kansas Relays • Drake Relays • Fresno Relays • Los Angeles Coliseum • Modesto Relays • Madison Square Garden National Championships . . . and most of the country's other great Meets.
5. By improving performance and systematizing the running of big meets, Arnett Blocks increase attendance and put track and field on a paying basis.

Furnish 2 ARNETT STARTING BLOCKS for each lane on your track . . . avoid carrying blocks from school to school or town to town . . . reasonably priced, fully guaranteed.

SOLD DIRECT TO SCHOOLS

Wholesale School Price: Each complete F.O.B. Inglewood, Calif., plus tax if any, at \$20. Replaceable parts when needed. Rubber Foot facings at \$1 and "T" Nails at 75¢ each.

Richard W. Arnett

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Look for R. W. ARNETT U. S. Pat. No. 2323510

Cast in the top of every ARNETT BLOCK

HOW ARNETT BLOCKS Are Helpful to All Types of Runners

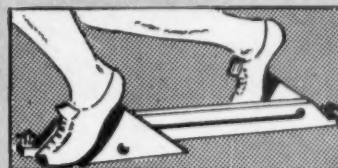


FIG. 1, For Stumbling Runner: Toes and cleats of front foot are on ground.

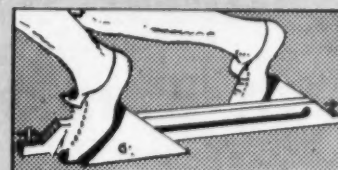


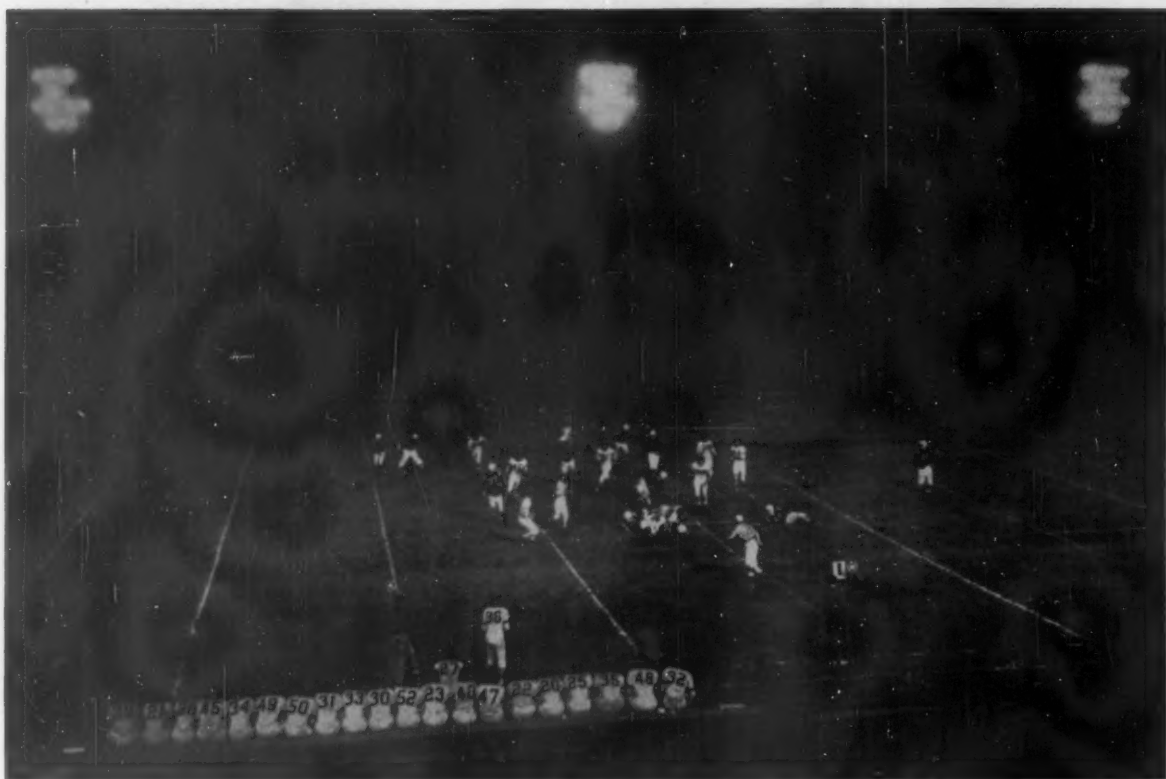
FIG. 2, For Bob-Up Runner: Toe barely touches ground; cleats on rubber pad.

WORLD RECORDS OFF ARNETT BLOCKS

- | | |
|-----------------|-----------------|
| • 100-Yd. Dash | • 400-Meter H. |
| • 220-Yd. Dash | • 110-Meter H. |
| • 440-Yd. Run | • 880-Yd. Run |
| • 120-Yd. H. H. | • 2-M. Relay |
| • 220-Yd. L. H. | • 880-Yd. Relay |
| | • 440-Yd. Relay |

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- | | |
|------------------|-------------------|
| • 440-Meter H. | • 200-Meter Dash |
| • 800-Meter Run | • 400-Meter Relay |
| • 400-Meter Run | • 110-Meter H. |
| • 100-Meter Dash | • 1600-Mtr. Relay |



General Electric

Under the Lights at Maple Heights

HIGH SCHOOL football teams faced with the serious problem of sagging gate receipts might well take a lesson from Maple Heights (Ohio) High School.

After suffering from poor attendance for several years, Maple Heights is now oiling the turnstiles in anticipation of bigger crowds than ever, thanks to the construction of a new stadium with an efficient, economical floodlighting system.

For a number of years, the team had consistent difficulty drawing respectable crowds to its games. Since the school didn't have a football field of its own, games were played in a neighboring community. There was an abundance of interest in the team, but few people were able to travel the required distance to attend the games.

Deciding that a football field for the school was the only solution to the problem, J. O. Smith, president of the Maple Heights Board of Education, initiated action for a bond issue to provide the necessary funds for building the stadium. Feeling that night football was essential, Mr. Smith included in his request sufficient funds for a lighting system.

Maple Heights voters enthusiastically approved the bond issue and work on the new football field was started. School officials then called in lighting experts to design the best floodlighting system \$4,000 could buy.

As it turned out, the money was enough to cover the cost of the lights, poles, all associated equipment, and labor.

A combination of wide-beam

and medium-beam general-purpose floodlights was used to provide the required illumination. Units are mounted 12 to a pole. Six wide-beam floodlights are topped by six medium-beam units on each of eight 60-foot-high poles located around the perimeter of the field.

Six other units, making a total of 102, are used as back lights to furnish illumination for the stands and concession areas. Average maintained illumination on the field is 40 footcandles.

High school athletic officials got a sample two years ago of the effect that the lights have on attendance. Playing night games in addition to a few afternoon games, the team drew its largest crowds in years.

The past season, all games were played under the lights and even better attendance was recorded.

As a result, the school's athletic fund—which supports a number of minor sports in addition to football—is taking on a healthy look again. Moreover, the increased revenue will serve to pay for the floodlighting installation within a reasonably short period.



RIGHT NOW is the time
to order **MACGREGOR**
FOOTBALL CLOTHING
for SPRING PRACTICE!

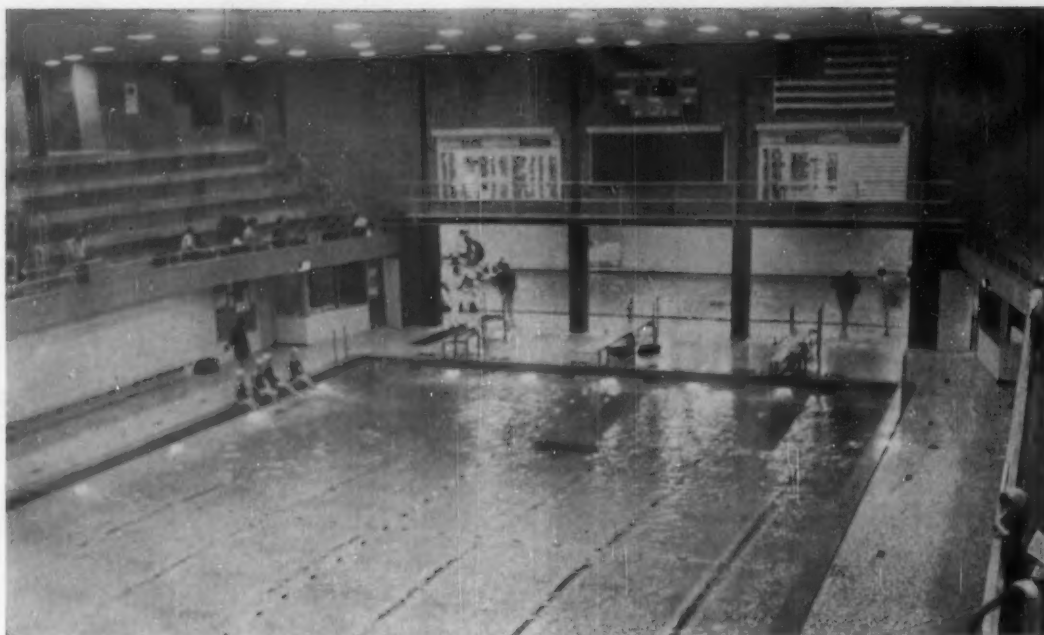


It'll soon be time for spring football practice. That means *now* is the time to get ready. MacGregor suggests that you place your order for practice uniforms as soon as possible. They're immediately available and in stock. By ordering today you can be sure of delivery in time for the first call to practice. Don't put it off . . . order your MacGregor football practice clothing now! See the complete line of practice clothing in your MacGregor Fall and Winter catalog.

And while you're ordering uniforms, remember helmets, shoes, Absorblo padding and the other MacGregor football equipment you'll be needing.



THE MACGREGOR CO., CINCINNATI 32, OHIO



View of twin pools at Evanston Township High when separating aluminum doors are raised.

Twin-Pool Natatorium

IT TOOK 33 years (from 1924 to 1957) for Evanston Township High School and its community (Evanston, Ill.) to realize their dream of having a swimming pool. But when the natatorium was formally opened, all who came to see the new facilities felt that they had been indeed worth waiting for.

The new two-story structure, adjacent to the gym building, stands at the northeast corner of the school campus. It contains two swimming pools.

One is 75' by 45' with 3½ to 12¾' depths and a water capacity of 171,000 gallons. The other tank, 30' by 60', has depth range of 3 to 4½' and a 52,700 gallon water capacity. The larger pool is filtered with two sur-flex filters; the smaller, with one filter.

A unique feature of the smaller tank is that the water level is flush with the non-slip ceramic tiled floor around it. This has a particular advantage for the instruction of beginning swimmers who might have a fear of the water.

The larger pool has a gallery overhead that seats 1,150 spectators for meets.



Shower heads mounted on pedestals allow the instructors free view of shower room from aisle behind partition; and soap dispensers and dishes adjoin each Hydroguard thermostatic shower control.

Any action is welcome

on Kreolite Gym Floors with the Built-In Cushioned Flex

Typical gym floors are subject to many kinds of activities, some of which can mar and scar ordinary flooring. But, with Kreolite Flexible Strip End-Grain Wood Floors, you have flooring that welcomes any kind of action and retains its original beauty.

Durable Kreolite gym floors are also noted for their extra resiliency which makes them kinder to feet and less fatiguing. Besides being easier on the feet, Kreolite floors are also much easier on school budgets because they require less maintenance and last longer.

Write today about new Kreolite installation or replacement floors.



KREOLITE FLEXIBLE STRIP
END GRAIN FLOORING

THE
JENNISON-WRIGHT
CORPORATION
TOLEDO 9, OHIO

The water in both pools is maintained at a temperature of 78° and is sterilized with chlorine and soda ash, added in measured amounts to maintain proper residual chlorine and alkalinity levels.

All deck, locker, and shower floors are of non-slip ceramic tile. Wall and ceiling ventilation provide maximum humidity control. The suspended ceiling over the large pool is made of acoustical material that separates the pool area from the roof. There are 126 lights in the ceiling.

PUBLIC ADDRESS SYSTEM

The natatorium is equipped with a high-fidelity public address system used primarily to pipe in music for free swimming periods and for water ballet.

The pools are separated by aluminum doors which can be raised or lowered, depending on the type of activity in progress. The tanks are flanked on either side by dressing and shower rooms.

On the west side of the building are the boys' quarters housing 162 lockers and 17 shower heads. On the east side are the girls' dressing rooms with 145 lockers, 14 hair-dryers, and 17 shower heads.

Stacks of aquamarine-colored towels on shelves in the area-ways leading to the boys' and girls' dressing quarters match the water-reflecting blue tiles of both pools and contrast with the pale beige tones of the woodwork, tile floors, and lockers.

On the shelves in the girls' locker room are colorful piles of regulation swim suits. Towels and swim suits are all supplied by the school and are laundered and sterilized after every use. Girls' suits come in a variety of colors, each shade designating a particular size.

Semi-free standing showers for observation ease, and thermostatic water controls for bather safety are two of the modern advances incorporated in the swimming pool shower rooms.

RUNNING WATER FOOTBATHS

The shower rooms also have continuous running water footbaths, and outside water shut-off for maintenance ease to provide the most modern shower rooms possible.

There are two shower rooms—one for boys and the other for girls, with 17 shower heads in each. In both shower rooms, a 4-foot high partition approximately three feet from the wall makes an aisle along

the length of the shower room. The shower heads are mounted above the partition, and supported by rectangular pedestals that enclose the water supply pipes.

This arrangement allows the instructors to use the aisle to observe the groups taking showers, thus preventing excessive horse-play that leads to accidents. In conventional types of shower rooms, instructors look through doors located at one end or the other, and thus do not have full view of the room.

Another shower room safety measure is the installation of thermostatic water controls for each shower. Called Hydroguards, these controls maintain a constant temperature at each shower head as set by the bather. Once the desired water temperature is reached, it never varies more than 2°F., regardless of fluctuations in water supply temperature or pressure.

The control automatically shuts off the shower if the delivery temperature exceeds 110°, thus preventing pranksters or a cold water failure from causing accidents.

EQUIPMENT SUPPLIERS

Underwater Lights—Pittsburgh Reflector Co.
Lockers—Berger-Republic Steel
Hair Dryers—World Dryer Mfg.
Showers—Powers Regulator Co.
Diving Boards—Patterson, Keifer, Buckboard
Diving Stands—Keifer
Scoreboard—Fair Play Mfg.
Pool Lane Markers—Keifer
Public Address System—Dukane

Hydroguards are also used to control the temperature in the two footbaths, which are located between the two shower rooms and the swimming pools. The footbaths use continuous fresh running water instead of disinfectant. If not changed often during the day, disinfectant can become the source of contamination instead of its preventative.

Other features of the shower room include soap dispensers and soap dishes.

One of the features the maintenance engineers like is the hot and cold water supply shut-off outside the shower rooms. In less modern rooms when the water is left running accidentally, the maintenance engineer has to walk into the shower room and turn off the water while the shower is still running. He can get awfully wet that way.

In these shower rooms, the person

in charge can shut off the water from the outside first, then walk in and turn off the individual shower.

Classes in swimming are taught during the school day by the physical education department teachers. Each high school student has a class in swimming every day for a six-week period during each school year.

After school, from November through March, are scheduled competitive team swimming for boys in the large pool and girls' swimming in the small pool.

From April to June, the after-school program includes classes in lifesaving and water ballet. One afternoon a week, the pool is reserved for the use of the faculty.

AVAILABLE TO ADULTS

Keeping its promise to the community, Evanston High makes the natatorium available to adults on Wednesday nights during the fall, winter, and spring. On Saturday mornings, during the school year, a swimming school for elementary school children is operated.

During the six-week summer school session, the swimming classes for younger children are held daily in the morning while the high school program is in the afternoon.

More than 1,200 elementary school boys and girls took the course of eight lessons in the Saturday morning swimming school during 1957-58, while an additional 700 were enrolled in the 1958 summer program.

An elementary school pupil may enter the swimming school at any time during the year and take as many lessons as he desires. A nominal fee is charged for every eight lessons. If a child misses a lesson for any reason, he is free to return whenever he wishes. As he improves in his swimming, he is "graduated" to a higher grade within his class group, thus being able to progress at his own speed of learning.

Each class period is an hour long, with 30 minutes for instruction, 15 minutes for free swimming, and the remainder of the time for showering and dressing.

After many years of winning suburban, regional, and state swimming and diving championships by using the Y.M.C.A. pool, ETHS intramural and interscholastic varsity aquatic stars this year were able to be hosts in their own natatorium to a number of significant swimming meets.

The school was also host to a weekend state conference of swimming coaches and instructors, who were outspoken in their praise of the new facilities.

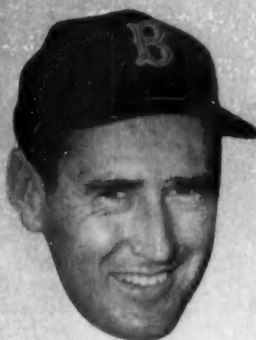
1884 1959



PETE BROWNING

The first Louisville Slugger bat was turned for Pete Browning—great slugger of his day with the Louisville Club of the old American Association.

TED WILLIAMS
1958
American League
Batting Champion



RICHIE ASHBURN
1958
National League
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For 75 Years

Performance has Made Them Famous

The history of Louisville Slugger bats cannot be separated from the lives of the famous sluggers who have used them. Browning, Wagner, Cobb, Hornsby, Ruth, Williams . . . these and hundreds more whose base hits and home runs thrilled the millions, wrote the story.

This 75th milestone in the life of one of America's most famous products will be commemorated in 1959 on thousands of diamonds by the greatest players in the game today.

HILLERICH & BRADSBY CO., LOUISVILLE, KY.

ALSO MANUFACTURERS OF POWER-BILT AND GRAND SLAM GOLF CLUBS



EQUIPMENT CARE AND HANDLING

AT FIRST glance, the care and handling of athletic uniforms and equipment appears to be a minor problem. Generally it's considered a menial task, one that occupies time, and is a necessary evil to beginning or ending the season.

The coach accepting this philosophy, however, too often finds himself with a continual burden on his shoulders culminating in a host of unaccountably missing articles at the season's end.

As most coaches don't enjoy the luxury of a paid equipment manager, this task must receive their personal consideration. A certain amount of imagination, organization, and planning will avert ultimate breakdowns in efficiency.

To initiate planned equipment handling, a system of accounting must be established. This should be characterized by concise, accurate records.

In order to develop such records, it's necessary to first mark each item of equipment in indelible ink as a means of identification. School initials and a number are sufficient.

A policy well worth following is not to issue anything until this identification is completed. Players cannot be held responsible for equipment that's not distinguishable from every other piece in use.

Once marking is completed, the system should enable a coach to add new items easily. Several satisfactory methods lend themselves. The one selected should be kept simple, since the coach has enough activities to keep him occupied without becoming involved in extensive bookkeeping procedures.

One method that has proven quite successful in both accounting and simplicity, is to use a five-by-eight inch file card to list pertinent information. This size allows enough room to include all facts desired.

Each card is identified by the name of the sport in the upper left hand corner and the type of equipment in upper right. The accompanying sample card illustrates this arrangement.

Various columns are arranged so that comparable facts appear adjacent to each other. Column One

records the number of the item, while Column Two records the size.

This is a very important piece of information since printed size numbers invariably wear off during the course of use. Then it becomes a problem of trying articles on before adequate fits are obtained. This isn't necessary where sizes are already noted on the inventory card.

Column Three contains the date of first issue. Only by keeping track of this date can a coach determine the life being obtained from the equipment. Without knowing its life, he cannot sensibly plan ahead in his budget or realize the value he's receiving from a particular line of goods.

Column Four is a space for the discard date—when it has been withdrawn from use. This, along with the previous date, indicates the life of the equipment. It also verifies that the piece is no longer usable.

When this date has been recorded, it's helpful, for inventory purposes, to draw a red line through that item of equipment indicating it has been discarded.

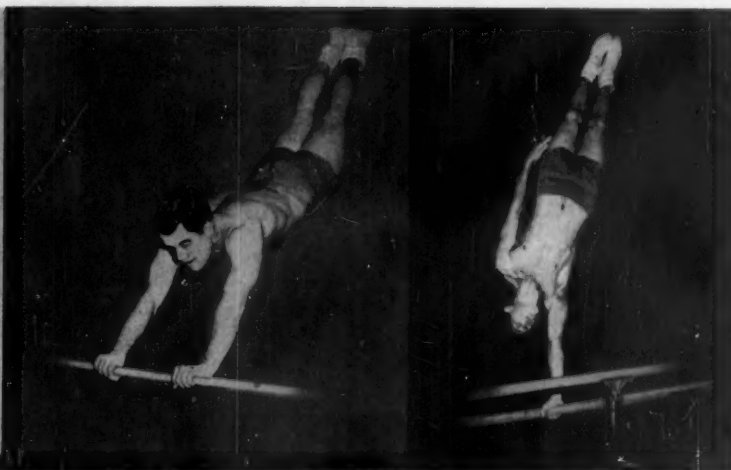
Column Five occupies the remainder of the card, representing about five inches. Here a record of issue is kept. By holding the writing to a reasonable size, the space on the card will prove adequate, without erasures, for the life of the item.

The system just noted provides great ease at times of issue. With every item and size noted, it's a simple matter to locate the particular piece needed by any one player. As it's handed to him, his name is recorded on the inventory card. This establishes a permanent record of possession. Cards are kept in a file, being withdrawn at times of activity.

Problems in the direct issue of equipment are numerous. Having 25 to 100 active athletes standing around while a line plods methodically through hours of issue, invites trouble.

While inefficiency doesn't create special difficulties in some games, sports such as baseball, track and football must be efficiently handled. The number of players involved and the tremendous amounts of equipment needed to begin first practices will cost endless hours if manage-

FOOTBALL		CENTRAL HIGH SCHOOL		WHITE PRACTICE JERSEYS
Sport		ATHLETIC INVENTORY CARD		Item
No.	Size	First Issued	Discard	Issued To:
1	38	9-4-55		Anderson, James Smith
2	40	"		Johnson, Herb Ely
3	40	"		Long James Hale
4	38	"		McGee, Robert
5	42	"		Johnson, Robert Bell
6	44	"		Middleton, Gordon Jones
7	42	"		Wright, James Jay
8	40	"		Robert James Buchanan
9	44	"		James Robert Puffy
10	44	"		Wright, Robert Puffy
11	42	"		Gregory, Robert Kelly
12	42	"		Robert James Dorian
13	42	"		Robert James Dorian
14	40	"		Robert James Dorian
15	38	"		Robert James Dorian
16	42	"		Robert James Dorian



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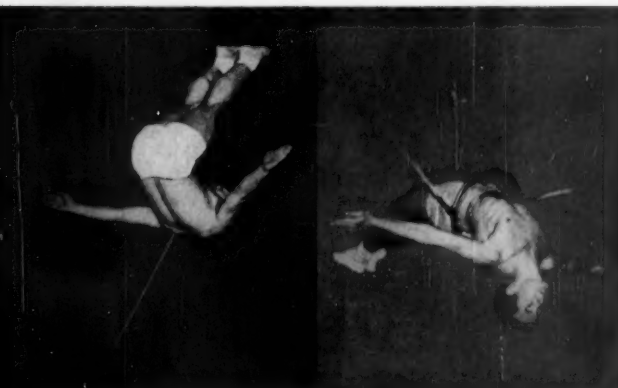
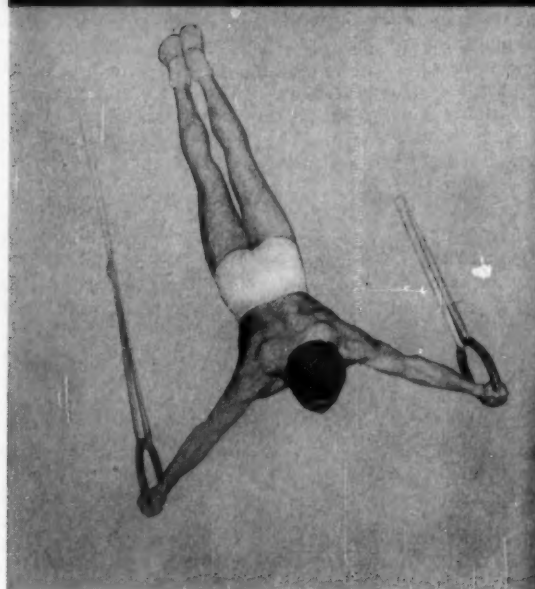
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ment is poor. It will also set a haphazard pace to a season that should be characterized by efficiency.

Issue for limited participant sports may be effectively handled from equipment rooms, provided proper storage has been effected. The major sports, particularly football, necessitate separate handling. Carefully plan this handling to avoid the pitfalls previously mentioned.

A satisfactory method, when quantities are involved, is to use the gymnasium floor for laying out an issue line. One door may be used as an entry, another as an exit.

On the floor, each type of equipment is placed by size and arranged in order of progression from inside out. That is, items are issued in the order they would be put on.

By the time he reaches the end of the line, the athlete is completely dressed and is inspected by the coach. He then proceeds to the field to participate in a group practice session to try the feel of the uniform and judge its proper fit.

Student managers, with a moderate amount of training, can handle the issuing of individual items. This frees the coach to circulate and check on the progression and fits.

Once the issuance is completed, of course, all unissued equipment is returned to the storage room for immediate restorage. It is placed here so as to be easily accessible for future use.

The return of equipment can be handled in reverse order of issue, with each student manager being held responsible for a specific item. The inventory card is placed at his collection spot. When an item is returned, he merely crosses the name from the card.

To check the student managers for honesty and accuracy, count the number of players turning in equipment, then count the number of items checked in by the manager. If the tally doesn't agree, he must assume responsibility for shortages.

In holding students responsible for items of equipment, it's necessary to provide them with adequate place to store this equipment. Ideally, each player should have a locker for small items.

A separate room, locked at all times when not open to players, should be provided for airing and drying clothing, with separate hooks or drying racks being assigned to each player to air out his uniform overnight. If the player cannot place equipment in a safe place, it's unreasonable to hold him responsible for its safety.

Since many items will be in the custody of the player at all times—

all marked with a different number—it's desirable for him to know his accountability. A small slip of paper, with each item listed, may be posted in his locker. This provides a ready reference for locating misplaced items. It will also keep him from coming to the coach to ask the number of a particular piece that he's unable to locate on drying racks or in his locker.

HANDLING TIPS

To assist the coach in following a planned method of equipment handling, the following tips are offered:

1. Mark equipment when first received. It's much easier to mark it as soon as it's checked in from the manufacturer. Once issued, unmarked, there's no way to accurately account for it. Also, if marked when received, small quantities are involved. Waiting makes an insurmountable task out of a simple job.

2. Record immediately on an equipment card. Once again procrastination compounds the job. Nothing should be issued until your records are complete.

3. Store systematically in a dry place. Make sure of proper room ventilation and allow enough space to avoid cramming. Any unnatural stacking will lead to deterioration.

4. Plan equipment issues carefully. Expecting complete interest and effort from your players is futile if you surround them with your own inefficiency. This isn't confined specifically to the practice field or game situation.

5. Select and train good student assistants. If it isn't practical to carry enough managers to adequately handle issues, some of your lettermen may be used for this service. They can be briefed in a few short minutes, then issued their equipment by the coach. They're then ready to assist and not have to take leftovers.

6. Stress responsibility. Hold players responsible for equipment in their possession. If it's willfully damaged or lost, charge them for it. In this way, equipment will last longer and be in better condition.

7. Provide for cleaning. Items of clothing must be washed or cleaned weekly. Arrangements for this are the responsibility of the coach. It may take the form of a washing machine in the gym operated by student managers. Or duplicate sets of uniforms may be provided to be exchanged each week and sent to a laundry service. Or it's possible to

(Concluded on page 75)

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Nissen Trampoline being used at the Canadian Championships, Canadian National Exhibition, Toronto, Ontario.



Co-educational trampolining unit at Arcata High School utilizing six regular trampolines and sev-

eral miniature "tramps." Note stress on safety, with spotters at sides and ends of "tramps."

Trampolining for ALL!

A Fresh Approach to Physical Education

ARCATA H. S. is situated in a fast growing community in northwestern California. Its growth is typical of many communities on the Coast. Five years ago it had about 700 students. Today it has 1,600, and two years from now the enrollment is expected to reach 2,200!

Our present facilities include two gyms—one for boys and the other for girls—each of which possesses an exercise room of adequate size for tumbling, gymnastics, trampolining, table tennis, etc. Our outside facilities include the usual fields and blacktop areas, but persistent rain keeps us inside much of the time.

As school districts go, we're probably below the state average when it comes to wealth. Nevertheless our program is recognized as among the best in the state. Our staff takes pride in this renown and works hard at maintaining an educationally sound program of about 20 activities designed to develop the optimum potentialities of our students.

About six years ago, the tram-

poline was introduced to the boys with the idea of adding another activity to the existing tumbling-gymnastic program. It worked out exceptionally well and instantly became one of our most popular activities. At that time, we rotated squads among the tumbling mats, high bar, parallel bars, side horse, and trampoline.

The following year the need for another trampoline became apparent. We found that aside from being fun, the "tramp" had much to offer in the way of developing strength, coordination, agility, and many of the other objectives of a well-rounded physical education program. We bought another trampoline; and with two trampolines to work with, we built a unit of work around them and the tumbling mats.

Because of the nature of this exciting activity, we used it to sell (through exhibitions) the overall

physical education program to the community. We showed everyone the value and place of a well-rounded program for every student in school; and, as a result, today we include a special unit of trampolining using six trampolines.

Our trampolines are used in several ways. First, we have separate three-week units of trampolining for freshmen boys and freshmen girls. In their junior and senior years, another unit is offered in more advanced work. Besides these regular units, the trampolines are set up as a station for the coeducation program. Finally, the trampolines are used in the after-school recreation program and in the exhibition team program.

In all our units on the trampoline, we try to work toward the basic objectives of rhythm, poise, strength, coordination, agility, good posture, and control. From a teaching standpoint, we like it because: (1) it's an activity that everyone likes, (2) it can be done indoors or out, (3) once set up, it's easily administered, (4) it takes a small amount of space for number of students participating, and, (5) it's SAFE.

Perhaps this would be a good place to talk about our method of teaching

By RICH HARRIS

Arcata (Calif.) Union High School

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safety. In our introduction to the trampoline, we like to compare it to the automobile. Basically, both are masses of inanimate materials that are powerless to inflict damage unless misused in some way. We wouldn't think of leaving a car with the motor running or invite teenagers who've never driven to try it out. If we did this, someone would surely get hurt.

Likewise we wouldn't think of leaving an open trampoline for anyone to get up and see what he can do. The trampoline, like many other activities, does require supervision. When our trampolines are set up, the room is kept locked unless an instructor is present. This isn't a new practice in physical education—it has been done with swimming pools for years.

Our students know they'll lose their trampoline privileges if they don't abide by our basic rules. Our rules are few, but important:

1. No one can jump unless an instructor has authorized the use of the "tramps".
2. Only one student is allowed on the "tramp" at a time during regular physical education classes.
3. They can get on in many ways, but they know only one way to get off—and that is to take hold of the frame with one hand and step off.
4. No mats are used around the trampolines, as they'd offer too much of a temptation to dismount by bouncing off the trampoline onto the mats.
5. We insist on at least four spotters during gym periods, one on each side and the ends.
6. The student must learn stunts in the proper progression so that he won't lose himself in a stunt for which he isn't ready.

In our spotting, we tell the students that, while waiting their turn, their spotting is very important and that they are to keep their eyes on the performer's waist. If the performer rebounds in their direction, the spotters are not to wait nor back up but are to meet the body mass and direct it back to the center of the bed.

We don't use much direct spotting in our gym classes, other than a hand-spot when teaching the back somersault. Though we use the overhead belt occasionally in the double-back somersaults, we mainly rely on readiness for the stunt through proper progression. Sometimes we find use for our twisting belt when trying a difficult, twisting stunt.

During our freshman co-ed unit, we ran about 500 boys and girls through a two-week session. We took 40 to 45 students at a time, six periods per day. This amounts to about 250 students per day for two weeks or 10 school days.

During these two weeks, about 2,400 boys and girls walk into the trampoline room. While there, each takes at least 10 turns on the trampoline, and in some cases they take many more. This, then, amounts to at least 24,000 times that the trampolines are

mounted with about a quarter of a million attempted bounces.

Now get this: during these quarter of a million bounces, *not one boy or girl suffered an injury of any nature!* We're not going to say that you cannot get hurt on the trampoline. We've had some injuries over the years, just as we've had them in basketball, softball, football and other P. E. activities. But when we do have an injury on the "tramp," it's looked upon as any other P. E. activity injury. Over the years, we've found our accident incidence as low on the "tramp" or lower than that for other activities.

Another factor important to safety is proper progression. It's important to learn to bounce before learning to do a double somersault, etc. In learning to bounce, we stress arm lift and control—above all, "control." We teach them how to kill their bounce when landing off-balance, and frown on high, reckless bouncing.



Individual instruction on miniature trampoline with aid of safety belt.

During our co-education unit, we introduce the five basic drops. We've had a great deal of success in teaching the seat drop, knee drop, hands-and-knee drop, back drop, and front drop to both boys and girls in just a few meetings. In addition, they learn combinations of the drops and such things as the swivel hips and other twisting exercises.

Each boy and girl also experiences the front somersault during the introductory unit. This may sound a little advanced for an introduction, but we've had well over 90% of our boys and girls doing all five basic drops and the front somersault, at least to their seat; and, we've had a great many learn the complete somersault to their feet.

To give an idea of our safety and progression, we'll review our method of teaching the front flip or somersault to 45 students during one class period.

First, we line up the trampolines with a small tramp at the end. We place a spotter alongside the small tramp and at the far end of the

trampoline. We have a rotation plan for the spotters. When everything is set up, we start the lines on a series of vaults off the small tramp onto the trampoline.

The first move is to spring from the small tramp, using a "two-foot" take off, to the trampoline landing on both feet on the bed. We have the boys run with the girls, holding their left hand during their first turn. (This program has many objectives.)

The second turn finds them taking off on both feet from the small tramp and placing both hands on the trampoline bed, ducking their head and rolling on. This step is repeated to make sure everyone is ducking his head correctly, rolling straight, and in general, getting the feel of the stunt. We require them to dismount off the side—not the end—in order to check their forward momentum.

On the next few rolls, we stress getting more height and more hip lift. We then have them use the back of their hands for the high roll. They naturally won't put weight on the back of their hands, so actually they're doing a three-quarter front somersault. Next, they use the backs of their fingernails and then they reach, duck, tuck and roll without touching their hands.

When they get so they're reaching well and landing on their feet or seat, we have them stand in the center of the trampoline, face the spotter, and do exactly the same thing except they must reach up instead of out.

They all look forward to this particular day's lesson each year. It keeps them busy; they have a good time; they all meet a marked degree of success through this progression; they don't have much thought of fear as everyone else is doing it too; and, the steps are so gradual that they're flipping before they realize it.

Our emphasis on the safety phase of our program contributes importantly toward safety consciousness in other sports and life situations. The students develop a respect for safety measures, they learn how to avoid injuries when falling, and they learn to be in position to assist others when dangers arise.

While talking about safety, we've also given you some idea of our co-education program. As we said, we use our co-ed program to introduce the trampoline to both boys and girls. We could arrange introductions separately, but we find the trampoline ideally suited to co-ed activity and it works out very well for us. After the introduction, they're given separate instruction within their own programs.

Our boys' program is set up in a three-week unit incorporating beginning and intermediate skills. At the beginning of each unit, we have a lecture and demonstration period. We talk about the rules and why we have them, demonstrate the unfolding and folding of the trampolines, and talk about safety and the importance of it. We then show the film, *Up in the Air*.

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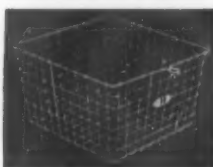
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The boys are then taught proper mounting methods, pointing out that they should step from the frame directly to the bed and not on the suspension system. We show them how to dismount and how to use proper spotting technique.

During the first lesson, we show them the rotation method we want them to use. They mount from one end only, and, after one boy has mounted, each spotter moves one position clockwise. Upon completion of his turn, the performer takes the position of the last spotter in line.

For organizational purposes, we have the class count off by the number of trampolines we're using. Each "tramp" has a corresponding number, so that we end up with an equal number at each. We rotate the groups so that no boy works on the same "tramp" each day.

As for teaching methods for the beginning classes, we use a system of demonstration, charts, and follow-the-leader. Usually for a new class, we'll place the trampolines around a smaller model that provides standard performance with a good sharp lift. The instructor usually uses it for demonstration work.

As a starter, the instructor usually demonstrates the skill that he wants done on that turn. We have the boys take no more than three bounces before doing the stunt. When the first person comes up again, the instructor gets the group's attention by gently raising his voice (or by firing the track starting pistol). He then points out any general corrections and proceeds to assign the next move.

Since we have a complete set of wall charts on each of the four walls, actually very little demonstration work is needed. However, our instructors like to jump, too.

With this method of teaching, we usually go through the following progression:

1. Review of the mounts, dismounts, and basic drops covered in the co-educational unit.
2. Review of the front somersault progression.
3. Back pull-overs.
4. Back somersault.

Much of this unit is spent on perfecting the skills of the basic landing positions and combinations that were introduced earlier. We stress control in landing and work on combinations leading up to swingtime routines. We take each boy as far as he's able during the three-week period. Each boy attempts the progressive stages of the back somersault series and many boys master the fundamentals well enough to let them attempt the complete somersault. On this stunt, we usually have our hand ready to spot should they need it.

If we can get every boy to meet some degree of success in this introductory unit, we feel we're doing well. Whenever we have a few who aren't challenged enough, we keep adding more for them. During the last 10 minutes of each period, we

allow them to review what they have learned or to try new stunts they're ready for.

Our teaching methods don't differ radically from any of the standard procedures listed in the accepted textbooks on the subject. We develop a few shortcuts now and then. But, for the most part, we strive for the same objective—that is, making sure everyone is meeting some success and progressing to his full potential. This is fairly easy in an activity such as trampolining.

EVALUATION

The evaluation of our work takes place toward the end of our unit. Each student is graded on required moves covering all the basic drops, combinations, and front somersaults. On testing days, the room is set up with two trampolines separated by a table with a chair on top. The instructor sits up on the chair where he can see both trampolines, with his roll sheets for marking. The students are organized by roll call numbers, with the odd numbers on one "tramp" and the even numbers on the other.

The instructor then outlines the grading procedure. He gives a plus if the move is executed in the prescribed manner with good form; a check if the student just gets through the move; and a minus if he fails the move completely. While one boy is being tested, the other boy is taking his three preliminary bounces so that no time is lost and all the instructor has to do is look from one "tramp" to the other. (A swivel chair helps unless you're in shape from watching ping-pong.)

We test about 15 representative items, scoring three points for a plus, one point for a check, and no points for a minus. The totals are added and a frequency distribution table is drawn from which the letter grades are assigned.

In addition to evaluating the students at the end of each unit, we also evaluate the program in terms of fulfilling its objectives. The course of study and teaching methods are reviewed and notations for revisions are made.

EXTRA-CURRICULAR INTEREST

Out of our boys', girls', and coeducational programs comes an interest in after-school recreation. Each Tuesday and Thursday after school, we open up the "tramps" and offer instruction to those who've found it a means of expression. These sessions are co-ed and are very popular as an after-school recreation. It's here that the students improve beyond the average and our future performers get their start. From this group come our "Flying Tigers"—our performing tumbling team—but that's another story.

In summarizing our program of
(Concluded on page 59)



Ernesto Clemente, Superintendent, Northwestern, Evanston, Illinois
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Football Equipment System for the Small School

*Buying small amounts of good equipment
is better than buying greater amounts of some-
thing cheaper that won't stand up as long*

SINCE football equipment constitutes perhaps the biggest headache in the athletic program, particularly in the small school, we'd like to prescribe some of the nostrums we've used the past 15 years in maintaining a small-school football program.

Some of the suggestions may sound a little big time, but all of them have contributed to the development of safely, economically, and attractively equipped teams.

MORALE FACTOR

Morale may seem unimportant to some equipment purchasers, but the smallest boy with the least ability needs the same type of equipment as the so-called stars in order to have the confidence to learn the game well and possibly develop into a stellar performer himself.

A team that's dressed sharply has added incentive when it runs onto the field. Good, attractive equipment gives a team confidence and pride in itself.

Misfitted players are a detriment to morale. They're the tail-enders who are equipped with a jersey or pair of pants that doesn't exactly fit or match the rest of the squad's. The morale of the entire squad suffers where this practice is observed. And it carries over to the spectators, since misfits detract from the color of the game, which is a prime factor in football.

GAME EQUIPMENT

The purchase of game uniforms should be thoroughly planned on a long range basis. Since a single purchasing agent effects economy, it's important to put the equipment man

in entire control of purchasing.

By game equipment, we mean the game jersey, game pants, and possibly the game socks if your budget can afford. If the game socks can be purchased, they should be designed at the same time as the jersey and pants. We've found a nylon-durene sock the most practical and durable.

Set up your game jersey design with the school colors in mind. While several good blends and materials are available, we've found nylon-durene jerseys very serviceable. For durability, a medium weight is the best.

The design of your jersey should be attractive so that you don't have to change it every time you reorder. If your jersey is well-planned and chosen, you'll usually need a minimum of 6 new ones a year to keep your inventory in excellent shape.

Keep in mind that no equipment man can fit 35 boys properly if he orders 35 jerseys eight months to a year before the coming season. After a squad size is estimated, order at least 6 jerseys above the estimate to insure a decent fit for all.

A good point to remember is that most manufacturers and jobbers charge less per jersey on orders of 6 or more. This pays off when reordering from year to year.

We feel, from experience, that jerseys should be ordered on the large side. The reason for this is that jerseys tear when they fit too tightly after laundering. And where they fit too tightly over the shoulder pads, they're damaged even more from being taken off and put on than from actual wear and tear.

Two-color uniforms are less expensive than three-color types. Remember too that the numbers can be stitched on with a contrasting

color for much less than a double block letter would cost. With the stitched numbers, you can get almost the same effect. The size of the numbers and the amount of the letters or numbers increase or decrease the cost of a jersey.

A built-in supporter on the game jersey is a good way to assure a good appearance at all times. This keeps the boys' jerseys from dangling outside the game pants no matter how much the boys put out in the game. But keep in mind that this will also add to the cost of the jersey.

GAME SHELLS

Game pants can be purchased in any color or type of material. Here we suggest a nylon front with a two-way stretch back and duke crotch. While this is probably the most expensive of all types of pants, it's the best buy in the long run for fit, durability, and economy.

Your game pants can be very sharp without any braid or two-color scheme. A one-color pants can be most attractive.

The two-way back pants will vary in cost, depending on the various makes. Some are made with two panels, others three and up. This is the reason for the varying costs. The duke crotch can be eliminated, but it adds to the life of the pants because it's the stretch material at the point of most strain.

Nylon with two-way stretch back is very easily laundered and will hold its shape. Whipcord is also a good front for these type pants. Some manufacturers also offer good fronts with trade names on their materials. We've found that some all-knit pants are good, but have a tendency to stretch and bulge after being worn for a short time.

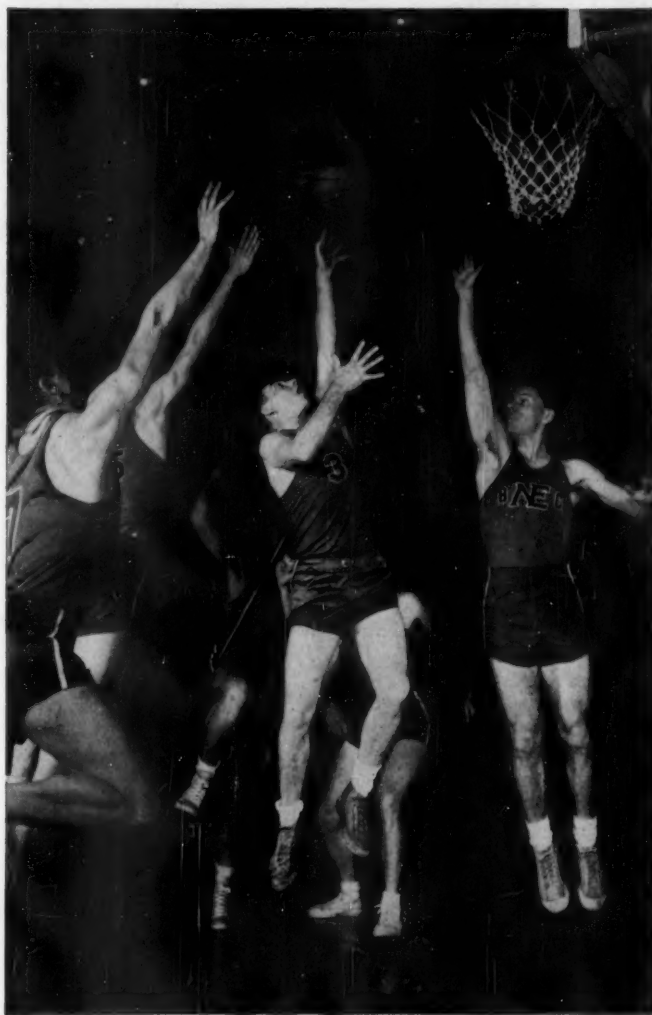
The sizes of most two-way stretch pants can be ordered true to size, or even a little smaller for some days. This will give a good skin-tight fit, which is needed to insure safety.

The same procedure offered in

By JOHN F. BOEHEIM

St. Andrews H. S., Saginaw, Mich.

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Niacin	9.5%	6.5%	7.5%	8.0%
Vitamin C	4.8%	3.6%	4.8%	4.8%
Vitamin B ₆	16.0%	16.0%	16.0%	18.0%
Protein	13.5%	9.5%	14.5%	14.5%
Iron	20.0%	16.0%	20.0%	20.0%
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ordering and reordering the game jersey can be followed for the game pants. Most special orders always cost less in lots of 6 or more.

Game pants without sewn-in knee pads are the best because constant washings deteriorate the pads that are attached to the pants and ruin the entire pants before its normal lifetime. We suggest separate knee pads in all cases. They'll pay in the long run.

HELMETS

Care must be taken in selecting helmets because of the vital area you're protecting.

There are two schools of thought regarding helmets—the plastic and the leather. We prefer the plastic because of its durability over the years and its insusceptibility to weather or storage conditions. In short, plastic is much easier to care for and affords very adequate protection.

Another advantage of the plastic helmet is that it can be made in varying colors which are longer lasting. A two-color helmet adds greatly to the attractiveness of the entire uniform, and again should be planned with the jersey and pants.

Various manufacturers offer different types of suspensions in their helmets. Most are very good, but the equipment man should make sure the suspension is durable and highly protective.

Numbering your helmets, which can be done at nominal cost by the manufacturer, is recommended to help the boys keep track of their own helmets.

While our partiality to the plastic helmet is quite clear, it should be noted that most good leather helmets are truly a craftsman's joy and are most protective. But we do believe that the plastic type does the best job for the small budget.

Another noteworthy point is that the plastic helmet requires less reconditioning—and great durability is a vital concern in the small-school budget. Most small schools must use the same helmet for practice and games, and the plastic type is the toughest for a very tough job.

SHOES

Shoes are the school's biggest item when it comes to expense. They deteriorate faster and get more wear than any item. Again, the small-school player gets only one pair of shoes at a time and must wear them for both practice and games—which is every day for weeks at a time. Therefore, a good tough shoe is needed.

We've found that a cowhide shoe in the middle-price range has served us well. There are a number of good cowhide shoes on the market with various features that make them practical. We've actually tested various brands by letting our larger boys use them for a season or until they wear out, then judged for ourselves which is the most durable for the cost.

Weather conditions certainly have a lot to do with the wear of a shoe. Water is the worst villain in ruining shoes. Some leather conditioner should always be put on the shoes to assure longer wear, especially during rainy wet weather.

As you probably know, kangaroo leather is a higher grade shoe. It's lighter in weight than cowhide and is usually more expensive. But we don't recommend kangaroo for a small school because it lacks the durability of cowhide.

Some manufacturers use other names than cowhide for the upper part of the shoe, but it's practically the same to all intents and purposes. Most small schools need the tougher shoe because the practice field isn't always ideal and the shoe takes a beating.

The cleat post construction, sole, and last of the shoe should also be thoroughly investigated for serviceability.

It's clear you must have a good shoe to do a good job for you. You can't buy a cheap shoe and expect it to hold up, since this piece of equipment takes the most punishment. It doesn't take experience or know-how for anyone to realize this.

PRACTICE EQUIPMENT

Practice jerseys should be ordered in a heavyweight cotton. We prefer a rib knit rather than a combed knit because we've found the rib knit the more serviceable of the two.

A standard stock jersey should be ordered, not necessarily in the school colors. Here again equip every boy with the same color and type of jersey to assure good team morale. Most manufacturers have standard stock jerseys which they'll sell at reduced cost when ordered in dozen lots.

For identification purposes, numbers in contrasting colors can be stenciled on your practice jerseys for a nominal fee by the manufacturer. This helps the equipment man keep track of the jerseys and helps the coaches identify the players at practice. Here again a little class can add to the morale of the team, even at practice sessions.

Because of the constant use of

your practice jersey, buy the most serviceable jersey possible to get the most for your money. The practice jersey isn't expensive as a unit, and with proper care will give you maximum service.

PRACTICE SHELLS

Practice shells come in varying styles and materials. They're made of duck, whipcord, knit type, and many other types of material. A full heavyweight duck shell is probably the most rugged but doesn't always give the best fit; while the knit type shell has a tendency to develop small holes on poor practice fields because of its rough use in scrimmage.

Because of varying conditions in the smaller school, it's hard to advise the type of shell to get. Since manufacturers stock practice shells of varying types, the cost is low in comparison to game shells made to order.

We suggest that your practice shells be made of one of the tougher materials and, as in your game pants, be ordered without sewn-in knee pads. Each boy can use the same knee pads for practice and games. They're made to fit most standard pockets sewn in all football pants and are easily interchangeable.

A belt sewn to the practice shell is an important feature that should be incorporated in your planning.

PROTECTIVE EQUIPMENT

The most rapid and valuable advancement in manufacturing lies in protective equipment. The recent introduction of special-coated vinyl sponge padding has made shoulder pads, hip pads, and all the other pieces of protective equipment much safer, more comfortable, lighter, waterproof, and mildew-proof, and also offers many other features not found in the fibre-covered rubber sponge or kapok type pads.

It's almost imperative for small schools to use this new type of construction in their protective equipment. We've become so fond of this new construction that we may have a tendency to go a little overboard on it. While we don't want to go into great detail about the advantages of any piece of vinyl sponge and coated-type equipment, they're so great that we cannot stress them too much.

The fact that this type of equipment almost eliminates the reconditioning problem is one good reason for the small school using it as a money-saving feature.

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Shoulder pads, rib pads, hip pads, knee pads, and all other type pads are now being built with this kind of construction. It's reached the point where it has been in the field long enough to attain near perfection.

While we have such a great fondness for this newer type equipment, we don't mean to imply that the conventional type fibre-covered equipment isn't any good. This is also a very fine construction and possibly there are still many who prefer it. But the small school with the small budget needs both the physical and economic advantages afforded by the new type construction.

As for shoulder pads, we've always been much more partial to the cantilever model than the flat type because we believe that the cantilever will absorb shock directly on the pad better than the flat pads, thanks to its built-up features. This is strictly our own idea and we don't have any injury figures to substantiate our reasoning.

RECONDITIONING AND STORING

There are many good reconditioners all over the nation. In order for your equipment to receive proper care and thus assure long wear, it's necessary to send your equipment to a reliable reconditioner as soon after the season as possible.

Sweat is the chief evil-doer that will ruin equipment not stored with proper care. Your reconditioner is equipped to dry, clean, and repair any damage to your equipment, and this will lend many more years use to it. The service will keep your inventory in good shape and require less ordering of new equipment every year.

We've found that the reconditioners usually do an excellent job of restoring shoes for another year of wear. As mentioned earlier, shoes are an expensive item and the job done by the reconditioner will reduce your budget cost annually.

The storage of your equipment is also very important. Your equipment or storage room should be as free from dampness as possible. Bins and shelves, if available, should be built to fit your equipment.

Any money spent on proper reconditioning and storing is well worthwhile. It offers the best way of prolonging the life of your equipment and constitutes one of the greatest money savers in the small budget.

CONCLUSIONS

Always buy top-grade equipment when possible; it will last longer.

The major producers of equipment are always improving their products.

Buying small amounts of good equipment is better than buying greater amounts of something cheaper; it just doesn't last.

A small school can purchase good equipment if its buying is planned and the type of equipment is somewhat standardized.

Planned buying from year to year will build your inventory quickly, and will enable you to save on your annual budget. Try to estimate how many pieces of each item you need to keep your inventory in proper condition—after your reconditioner has told you what equipment he'll be able to repair.

The ideas in this article were learned through plain experience, which is always the best teacher.

Football Videotape Recording

A UNIQUE "secret weapon" in the form of videotape recording moved into college football for the first time last season when Minnesota faced Iowa.

With the consent of Iowa officials, WCOO-TV of Minneapolis-St. Paul recorded the action on "Scotch" brand magnetic video recording tape and fed it through a closed circuit to TV monitors in the Gopher locker room during half-time.

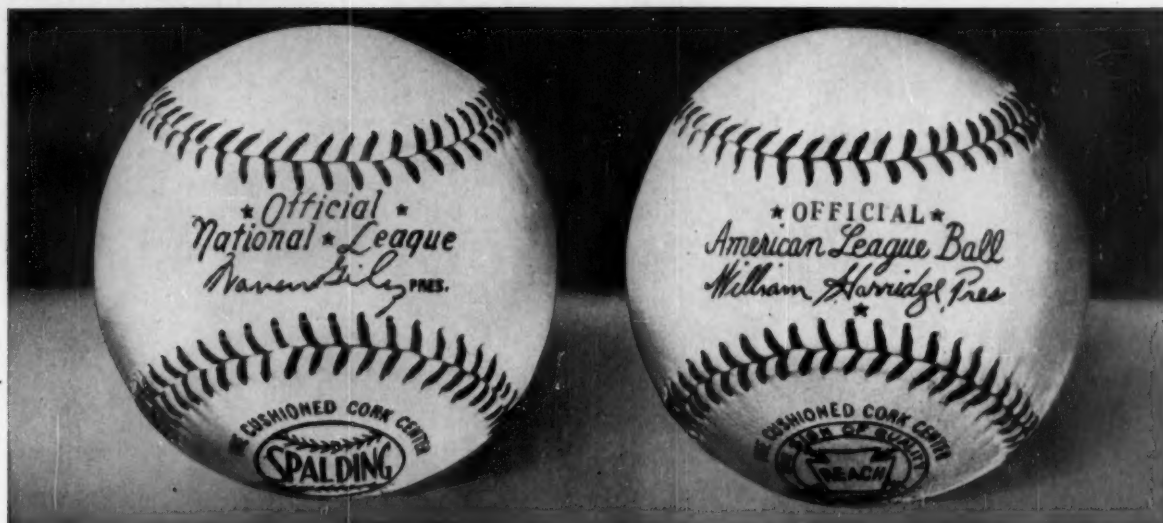
Coach Murray Warmath could call back and study particular plays in time to adjust his second-half strategy to strengths or weaknesses displayed by both teams. Minnesota assistant coach Dick Larsen manned a live monitor on the 50-yard line

during the game.

Although the Gophers lost, Warmath says the sideline monitor and the taped plays shown at half-time were valuable to his team, all of whom later viewed the entire game in their dressing room.

While the pro Los Angeles Rams employed a similar plan for its home games all season long, the Minnesota-Iowa game was the first time magnetic video tape went to work in college football.

While VTR cannot win or lose games, it's significant that the Gophers, down 21-0 at the half, held the Hawkeyes to a final 28-6 score and went on to beat Michigan State 39-12 the next week.



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By C. O. JACKSON

Physical Education Professor, University of Illinois

The Challenge of Fitness

WHEN Secretary Wilson dismissed the first Russian satellite as "something of no consequence," he probably made the understatement of the century. Anyone who reads the newspapers, listens to radio or looks at television, in fact any adult who has lived through the recent months knows the change in thinking, the bewilderment and uncertainty, the determination to do something.

C. G. Wyckoff, a newspaper editor, cites an ancient statement to illustrate our thinking at the time: "When in danger, when in doubt, run in circles, yell and shout!" The simile, "He jumped on his horse and galloped off in all directions," might also apply to many of our efforts during much of this period.

Today we must face the inescapable fact that the America of yesterday is gone, to be replaced by one with less security and greater fear, and, in education, increasing competition for time, money, facilities, and especially personnel. The emphasis is so one-sided in favor of engineering that during a series of six College Days only six individuals expressed any interest in the area of teaching!

What sort of experiences have we been giving young men and women in our programs so that so few are challenged to prepare for a life of service? Of course the glamour of the space age and the beginning salaries are also responsible. But we must take our share of the blame for not making our programs more educational on the secondary and college levels.

Fitness is not a simple concept. A citizen in these United States is really fit only if he's able to do his share to advance our democracy, our economy, our culture, our moral and spiritual life. And what his share is, is affected by his capacities, his level of maturity, his opportunities for self-improvement.

Fitness must be considered as whole, and there's some doubt concerning the expression "total fitness," since fitness cannot be con-

sidered in fractionalized parts. Its many components—physical, social, emotional, intellectual, spiritual—are threads interwoven into the fabric of human personality and behavior.

The business executive whose decisions are influenced by a flaring ulcer is as handicapped as the laborer with a sacroiliac sprain. The adult who lacks energy to participate in civic affairs is as unfit as the youth who spends energy in unsocial acts. And the hale and hearty citizen who cheats on his income tax is as much a drain on society as if he were chronically ill in a public institution.

SPECIFICS TO REMEMBER

According to the Fact Sheet from the President's Council on Youth Fitness, September 9, 1958, certain specifics should be kept in mind.

1. Children, between the ages of seven and 17 learn more than 80% of all the physical activity skills acquired during a lifetime.

2. More than 40 states have statutes calling for minimum physical education programs in schools. In most instances, these regulations are not enforced because of shortage in facilities, equipment and personnel.

3. Less than 50% of our 7½ million boys in 28,000 high schools have physical education.

4. Programs for 7½ million high school girls are even more deficient.

5. 91% of the nation's 150,000 elementary schools have no gyms.

6. Physical education programs for 24 million children in 150,000 elementary schools are often neglected.

7. 68% of the nation's high schools have less than the recommended 10 acres of land space necessary for essential play areas.

8. The school must provide an increasing part of the daily two to four hours of vigorous physical activity that's needed by each child.

9. Many of the present physical education programs in schools are unbalanced and inadequate, offering instruction only in the more popular

sports activities. A surprising number of these programs are so scheduled as to provide less than half an hour per week of actual participation.

10. Many schools close their playgrounds and facilities in the summer and at night.

11. Few school systems provide for a required program of physical education throughout an individual's school experience.

The word "fitness" is used to provide us with a unified and total concept, conveying the idea of wholeness for a particular person within his particular experiences of time and place.

In everyday speech we recognize the "specificness" of fitness in such phrases as "fit for the job," "fit to teach," "fit to fight," "fit to be a parent." These are concrete perceptions of the individual's adequacy to meet the social demands with which he's faced. Many such perceptions help us understand the idea of fitness for living in our society.

As to physical fitness, we may describe the totality of fitness by naming its various aspects such as physical, mental, emotional, spiritual, social. Yet the unity of the organism makes invalid the view that we can be concerned with any one aspect alone. All aspects of fitness of young people are influenced by their physical education experiences. This being the case, we need constantly to guard against letting an interacting part of fitness stand for the whole in our thinking.

To reject the term physical fitness isn't to deny that physical education teachers bear a special responsibility in the education of youth. Their unique task, by the nature of their subject matter, is to help them develop the power of work. In each individual this power for living is made up of that individual's particular pattern of interaction of the internal and external factors.

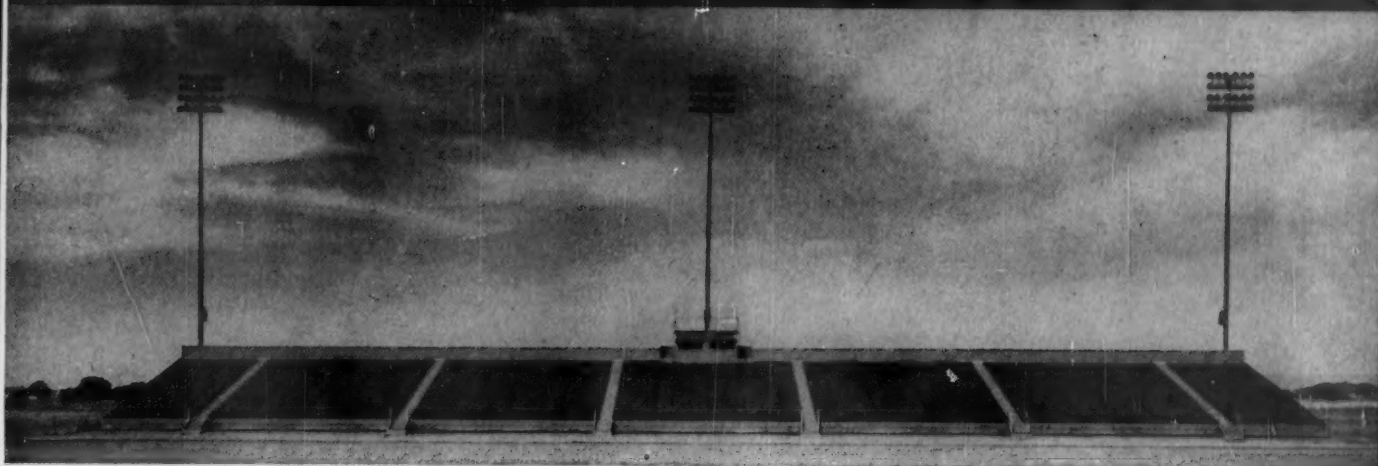
In considering organic fitness, it's not necessary to review the many knowledges and understandings already acquired in your courses in

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anatomy, physiology, kinesiology, psychology, and physiology of exercise. The detailed and complicated contents of those courses must, however, be seen as the underlying basis for organic fitness which may be thought of in terms of action thus:

Power to act—strength and endurance.

Skill to act—flexibility, timing, balance, relaxation.

Motivation to act—goal or purpose.

Knowledge for action—facts.

Any listing of elements in a total concept such as organic fitness gives a false impression of separateness. Actually, motivation is implicit in the power to act, as is skill. Motivation and power enter into attaining skill to act. Knowledge of the underlying principles of one's power to act and the results of one's action in relation to self and others is essential to the fitness of the organism.

The four aspects more sharply indicate the inseparable elements in organic fitness. These elements might be discussed equally well under the headings, Physical Fitness or Organic Power, if these terms are thought of as including the power, the skill, the motivation and the knowledge of the organism to act.

In making the effective body instrument for today's living, **POWER TO ACT** is actually dependent upon endurance of two kinds—the ability for sustained activity over long periods and spurts of strenuous effort for short periods of time.

Endurance may be thought of as the power of the organism to resist fatigue and continue muscular action. The cases of fatigue, both physiological and emotional, and the principles of "training" as means of taking care of fatigue products should be understood in relation to building the endurance of the individual through physical activities.

Strength or strengths may be thought of as related directly to muscular effort in exerting force. Through muscular activity are achieved development of the vital organs and ability of the body to maintain effective postures and the like. A flabby musculature means weakness rather than strength of the body instrument. The wiry, muscular, "trained" body has more power to act than the heavy, unwieldy body.

It might be pointed out facetiously that while many people exercise vigorously, it too often consists of "jumping to conclusions, running up bills, stretching the truth and bending over backwards."

SKILL TO ACT has to do with the various aspects of body control, integrating movement toward the desired end with effective timing,

balance and relaxation, and the minimum expenditure of energy. Flexibility and range of movement of the joints are basic to skill in body action.

Actually, the individual's power to act isn't achieved through the possession of strength and endurance alone. He may have body strength and endurance, yet lack the will to act or motive to act for lack of a declared goal, drive, want or purpose.

MUST HAVE PURPOSE

Conversely, goal or purpose stimulates the desire to possess and use the power and skill to act. It's the emotional factor which integrates all the powers of the individual making full effort possible, gaining results with a minimum of stress.

Human beings tend to operate at a "psychological limit" rather than a physiological limit in releasing power to act. But what they can do is unbelievably extended under excitement, desperation, hypnosis, shock therapy, and the like.

MOTIVATION is basic to physiological response, and psychologically an essential in all growth and learning. It's the spark to action and must be a first consideration in teaching for effective and efficient results.

Power, skill and purpose in acting become irresponsible and even irrational if we don't include the obligation for knowing the basic facts about one's own power, how to achieve it and how to use it in relation to oneself and, in a responsible sense, in relation to others. The individual who has a high level of strength and skill but lacks the understanding of his power and the social concepts for its use, is not fit.

We have always to answer the question, *fit for what?* In cogent words, Jesse Feiring Williams states the importance of this question for physical education teachers:

Force and strength without humane direction are too terrible to contemplate—vitality that is ungenerous, beastly and knavish is no proper objective for any division of education. Let the sponsors of physical education have deep convictions about the tremendous importance of vigor and vitality in peoples; let them assert, time and again, and everywhere, the strategic and important role of muscular activity in development, but let them guard against an unworthy exclusiveness that leaves them de-

voted to strength with no cause to serve, skills with no function to perform, and endurance with nothing worth lasting for.*

True, "total fitness" then centers around an integrated totality of physical, mental, emotional, and spiritual fitness. It means that schools and colleges must help every individual reach his utmost in functional health, physical development, vocational and social competence, cultural and intellectual growth, self-expression, and moral character.

And for professional leaders, it means daily realization that we cannot separate these areas anymore than we can send the youngster to the gymnasium, the swimming pool, or the playground, and insist that he leave his mind and his spirit in the locker room!

Perhaps some illustrations will help delineate this point of view. If we think of a pyramid, the physical is the start, the beginning, the basis for all aspects of fitness. It's the organic one, and the one we must consider fundamental. A healthy, physically-fit person is likely to be mentally, emotionally, and spiritually sound. It depends, of course, on his heredity and particularly on his environment. In that area, the sort of guidance and leadership he has been exposed to from people like us, is vital.

MENTAL ASPECT

The mental, of course—the next section of the pyramid—is tremendously important, not only in terms of the intelligence needed to live and make a place for ourselves and our families, but in terms of what is needed to survive as we try to help build a better world.

One third of all the hospital beds are given over to mental cases, those people who couldn't cope with their problems, who've withdrawn into a dream world all their own, or who've been placed in institutions to protect themselves or society. With proper balance of the physical, emotional, and spiritual health, perhaps more of our people would have better mental health.

The third tier of our pyramid, emotional fitness, is a great need today with all the stresses and strains of modern living, the sputniks, the cold war, the uncertainty, the worries. Worry is good for everyone, providing we worry about the problems or the obstacles we can overcome.

Perhaps one solution is to select our worries with care, and then let
(Continued on page 68)

*American Association for Health, Physical Education and Recreation, First Yearbook, *Developing Democratic Human Relations Through Health Education, Physical Education and Recreation*, Washington, D. C., The Association, 1951, p. 84.



Big gym. Big job. Seal-O-San® used here—the tough gym floor finish that is non-skid, glare-free Grasshold & Johnson, A.I.A., Milwaukee, Architects

Rip Van Winkle plans longer floor life program for Brookfield High

"Like anyone with a new gym floor, we wanted to see it stay new looking," said Ed Fricke, Superintendent of Buildings and Grounds at Brookfield, Wisconsin. "We called in Rip Van Winkle of Huntington Laboratories. He suggested Seal-O-San Gym Floor Finish as the best of the Seal-O-San products for our traffic and use conditions. He followed this up with the suggestion that

Huntolene® Antiseptic Floor Treatment be used for daily dust mopping. We liked the idea of controlling germs that are found on floors as well as those that settle from the air.

"Today we're mighty pleased with the maintenance program. The floor looks good. And our costs are in hand. Our coach, Ronald Blomberg, likes Seal-O-San because the boys don't slip and slide."

See the "Man Behind the Drum," the Huntington representative in your area. And send for information on Seal-O-San as well as other Huntington sanitation and maintenance products.



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QUARTER										DOWN										QUARTER										NUMBER									
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QUICK KICK																																							
SCOUT CARD																																							

Maryland's Football Data Processing Card System

"He's in the clear!"
"He's going to go all the way!"
"Go, Ted, go!"

FORTY-FIVE THOUSAND overjoyed Maryland football fans screamed encouragement as speedy halfback Ted Kershner threaded his way through the North Carolina team. The Tar Heel linebacker had been neatly boxed out of the play; and once out in the open, Kershner sped unmolested 81 yards for a touchdown. Not a Tar Heel player came even close to laying a finger on him.

Among the vast crowd thrilled by Kershner's run were Her Majesty, Queen Elizabeth II of England, and His Royal Highness, Prince Philip. Kershner's run was a play fit for a Queen—or any other football fan. Perfectly executed, it broke the back of the North Carolina defense, and Maryland went on to finish on the long end of a 21-7 score.

Behind every successful play in big-time football stand long hours

of patient work, and Ted Kershner's block-busting run was no exception. Besides the usual preparation, Maryland's coaching staff had the aid of a brand new idea for football—data processing information from marginally-punched cards.

The idea is basic to business and industry, but Maryland believes it is the first school to use such a system for football, according to Head Coach Tommy Mont.

"We started using Keysort cards last year. So far as we know, we're the first college football team to put scouting data on our opponents—and data on our own team's performance—on these cards.

"It saves time, makes all the information far easier to get at, and gives our coaching staff more accurate and reliable data. We at Maryland believe we're going to go into future games better prepared because of our new system.

"Take the example of Kershner's run. Every play the North Carolina

A new concept for HEALTH PHYSICAL EDUCATION RECREATION *plus SAFETY!*

"The child's interests tend toward motor acts."

"If the individual has been active throughout childhood and youth maximum fitness is achieved earlier."

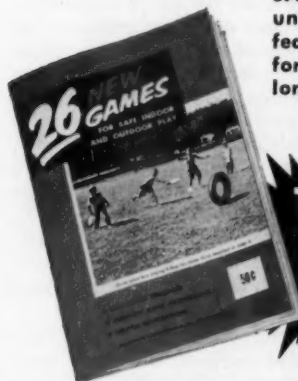
From JOHNER and
Journal of the A. M. A.

YOUR RESPONSIBILITIES . . . whether as instructor, supervisor, coach, director, principal, superintendent . . . to provide healthful recreation and effective physical education . . . are often made complex and difficult by the fact that children's interests are so strongly "toward motor acts".

SAFETY AT PLAY is no simple matter when gyms and playgrounds are crowded with active youngsters. The Cosom SAFE-T-PLAY idea grew out of your need to prevent physical injury as you promote physical fitness.

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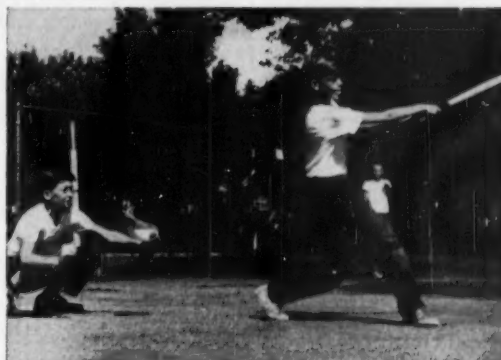
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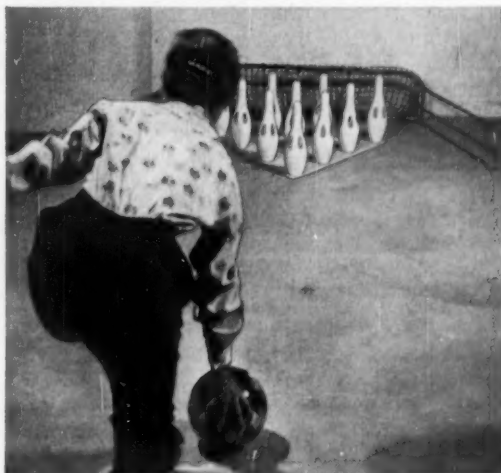
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Game teaches accurate throwing and timing with Scoops.



Batter gets a hit in game of Scoop Diamond ball. With the 30" Safe-T-Bat, this game can be enjoyed by adults as well as youngsters.



Teach regulation bowling with Bowlite.

team had been involved in all season was recorded on one of these cards. We noticed what we thought was a pattern—that on the inside drive play, the North Carolina linebacker often broke to the right. We were convinced that if we could get him out of the picture, we could run up yardage on the inside drive play.

"So we ran the play over and over during the game, picking up only minimum yardage. Then we got the break we were waiting for. He went too far. Ben Scotti blocked him out, and Kershner went for the game-winning touchdown."

There may have been a day once—long ago—when coaches allowed their teams to enter games "cold" without knowledge of their opponents' strong and weak points. But that day has long since gone. Football scouting has become recognized as one of the most important factors in building a winning team.

Scouts—usually assistant coaches or some other expert—outline every play that the future opponent makes. It's not unusual for a major opponent to be scouted all season for signs of telltale weakness. Are the guards slow? Can you run around the left end? Is the right tackle susceptible to inside pressure? The scouts watch every play for something that can be capitalized upon.

According to assistant coach John Idzik, who, with assistant coach Bill Dovell, are in charge of scouting the opposition and putting the data down on Keysort cards, an enormous amount of detailed information can be recorded accurately and quickly. This is ready for instant reference whenever it is needed.

"In addition to diagramming every play, we record the quarter, the down and distance gained or lost on the play, the lateral position of the ball, the kind of defense used, and the man who makes the tackle, plus comments of a specialized nature. Things like the quality of execution (excellent, good, fair or poor); the penalty, if any; fumbles; fumbles recovered; punts and punt protection (spread or tight); substitutions; plus any other information of interest."

Maryland ordered 4,000 of the Keysort cards from the Royal McBee Corp. for use last season, and uses about 175 a game. That's enough to get all the foregoing information on every play.

On the return trip home, Idzik hand-punches the correct marginal holes on the cards. It takes about an hour, and the end result is a complete resume of the contest on punched cards for head coach Mont.

"Suppose Coach Mont wants to know something about an opponent

—say Texas A&M," Idzik notes. "He might ask me: 'How often does A&M run to the narrow side on second down from the right hashmark?'"

"I just pick up the cards, stick the Keysort stylus through the appropriate hole, and all the cards that show what Texas A&M has done on the second down on the right hashmark all season, drop out. We can quickly examine them to see if there's a pattern."

"Lots of teams do have a pattern to their play. They tend to repeat themselves. That gives us an advance idea of what they may do against us in any of dozens of situations."

"The value of the file is likely to increase with age," Coach Mont declares. "Using these cards, we can pin-point every play any opponent has made in every important game for years. This should give us a real clue as to what to expect in any given situation."

SAVES VALUABLE TIME

The Keysort cards replace dozens of bulky, unwieldy manila envelopes full of data. Before Keysorting was used, many hours of valuable time had to be spent in compiling the most routine sort of figures. Suppose Coach Mont wanted to see what happened on, say, all the end runs that North Carolina State tried last year.

Previously, every single play had had to be examined to see if it was an end run. Now, the same data can be located in seconds by Keysorting the stack of cards. All end run plays will fall out. There's no danger that some significant play will be overlooked, either, with this system.

"The worst thing about the old way was that the data took a long time to dig up," the Maryland coach says. "This way, we can find out anything we want to know in a matter of seconds. And sometimes time is very important. It certainly eliminates a lot of clerical work. And that's important because we never have enough time to do everything that needs doing anyway."

"The Keysort cards free our staff from a lot of laborious, time-consuming routine clerical work and allow them more time to teach the players."

The new system eliminates many errors, too. When thousands of unwieldy pieces of paper in envelopes have to be shuffled and reshuffled, important information is likely to be missed.

Maryland switched to the Keysort system through the missionary

zeal of an alumnus, Roy Lunsford, who's with the Royal McBee Co. A football fan, Lunsford was convinced that the Keysort cards would be a real aid to the Maryland football staff. Coach Mont listened to his arguments and, convinced, ordered the switch from conventional methods to Keysort.

Maryland uses data obtained from the Keysort cards in preparation for every football game it plays. Few examples are as spectacular as the "home run" in the "Queen's game," though.

Movies of opponents' performances—and of the play of the Maryland players—are "broken down."

The system is simplicity itself. Appropriate notches on the rim of the card are punched out to give important data. One notch may indicate the third quarter, for instance. Another, punched out, would show that the play was second down. A third notch that it was a pass. A fourth notch could reveal that the pass was completed, and a fifth that the play was nullified by a penalty. In the center of the card, the coaches scouting the game diagram the play.

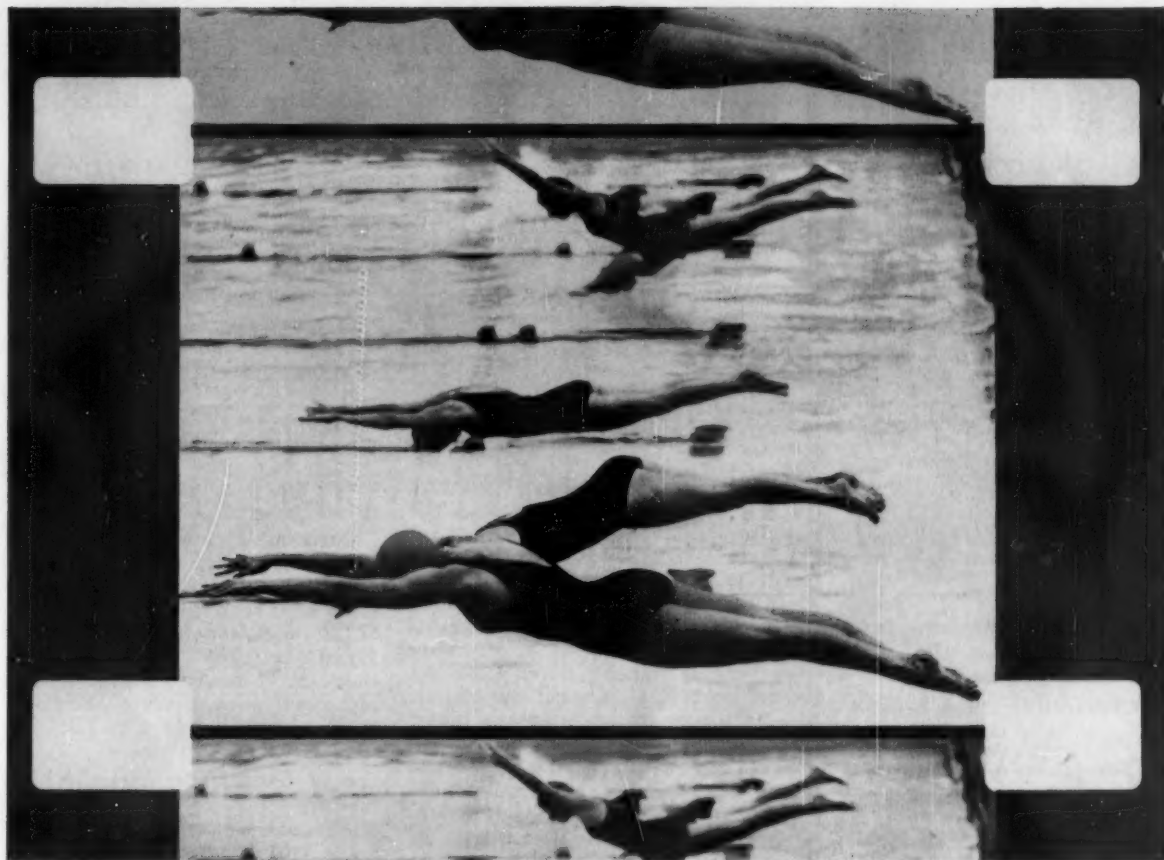
To get any desired information, the coaches simply run the stylus through the right notches on all of the cards, give them a shake, and cards showing what happened—for example, every time Texas A & M passed—would tumble out.

The Keysort cards are *original* records. They can be shuffled or stacked in any desired order, and are identical with those used by the hundreds of millions in business and industry for an amazing variety of purposes: personnel records, production controls, hospital records, cost accounting, and for tens of thousands of other uses.

Keysort cards make it possible to use scouting data far more comprehensively than before. Since only a tiny fraction of the previous time and effort is required to obtain significant information, anything Coach Mont wants to know he doesn't hesitate to ask. Facts are at his fingertips, and don't take the long hours of laborious search and tedious compiling of figures as required before.

Coach Tommy Mont is most enthusiastic about his new system. He has cards showing every play made by his opponents last year.

"Everything they've done offensively and defensively has been broken down and analyzed," Mont grins, "and we think this new system will help us a lot. It will eliminate a lot of work and a lot of guesswork."



Off to a good start...on film!

A race can be won or lost in the half-second after the gun, in the form and timing of the start. You watch your swimmers dive again and again. You can see where they're wrong, where they're right—and you *tell* them how they look.

But how much better it is if you can *show* them how they look. With movies of practice sessions and meets, your swimmers and divers can watch themselves in action, see for themselves why that starting dive was too deep, why that half-gainer scored only 3. Studying the films will give them a new sense of form, of timing. And next time, they'll be a stronger team.

For movies of all indoor sports events, Du Pont Type 931 Rapid Reversal Film is ideal. Without any special lighting, you get clear, knife-sharp pictures. Du Pont film can be developed fast, too—you can usually show your movies within 24 hours.

In every sport, all year long, movies are helping coaches everywhere build winning teams. For rehashing yesterday's events, for training future athletes, it's hard to beat this modern training aid.

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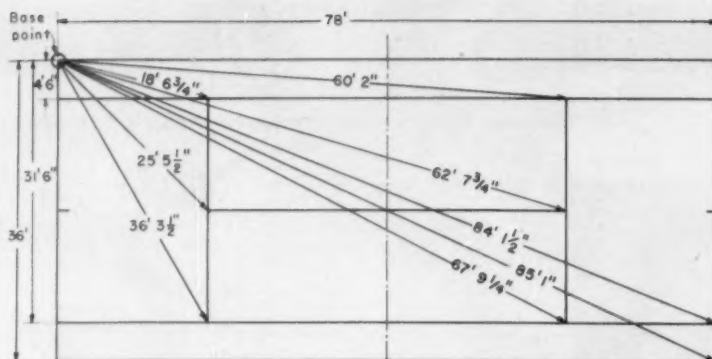
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Checking Your Tennis Court

HOW many years has it been since anyone actually checked the measurements of your tennis court? Most schools and clubs probably never bother. But the latest word is that most tennis courts are off as much as several inches. This is especially true when it comes to proper alignment (having perfect 90° corners all around the court).

Although most American tennis ground-keepers haven't the slightest idea of how to lay out a right angle on the ground, the Australians are probably the worst measuring artists in the world. At the recent Australian Tennis Championships in Brisbane, one side of the center court was 25 inches shorter than the other! The players themselves complained so continually about double-faulting that curious sportswriters finally

made the measurement that disclosed the error.

Checking a court for alignment and distance can be easily done from a single point on the court. Place a tenpenny nail at one corner of the court, and clip the hook of a 100-ft. tape over the nail. Then check the 13 key points on the court, according to the distances indicated in the accompanying drawing.

These distances, with the exception of the side line and the base line, are actually the hypotenuses of a series of triangles. Remember your algebra? The legs of the triangles are standard measurements given by the U. S. Lawn Tennis Association. Using the theory of the hypotenuses, a new court could be laid out correctly in a few minutes.

Roller Skating Programs

SUMMARY of experience with roller skating reported by typical schools who've been operating such programs for at least a year:

Hough Street School (Barrington, Ill.): Our program is in its third year and we recommend it enthusiastically for physical ed and recreation programs in the school gym. We re-finish our gym floor one additional time during the Christmas holidays. The cost of maintenance is little more than before we started our program.

Mason Hall H. S. (Kenton, Tenn.) reports no floor maintenance precautions besides those required before roller skating was introduced "except before the basketball season we clean and re-finish the floor." Floor maintenance totalled \$140 for 1957, and coaches agree the floor is being maintained without detriment to basketball and that skating receipts cover all costs—floor maintenance, skates, supervision, lighting, etc.

St. Mary of Celle Church (Berwyn, Ill.) reports a skating program on a maple floor 100' x 60' with no special

maintenance except a quick going-over with a large dust mop to pick up the dust. The floor remains free of dirt or dust marks, since it's treated with a penetrating rather than a surface seal. Admission is charged for skating, with receipts totalling \$5,000 in 1957—covering all costs.

St. Pius H. S. (Wauwatosa, Wis.), which has a big maple floor, reports that it was built primarily for use as a community center and that "basketball alone is too limited in terms of the number of students and people using the floor."

The floor is being maintained without detriment to basketball use. It's dry-mopped at least once every day, and about every six weeks it's treated with a specially prepared seal which cleans and seals in one operation.

The only extra precaution taken is to bar any fibre or steel wheels, any protruding axles, and certain toe stops that would mar the floor.

(Survey made by J. W. Wells Lumber Co.)

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- Book 3, *INDIVIDUAL AND TEAM DRILLS*.
- Book 4, *MAN-TO-MAN DEFENSE AND ATTACK*.
- Book 5, *ZONE DEFENSE AND ATTACK*. By Clair Bee and Ken Norton. Illustrated. New York: The Ronald Press. \$2.95 each.

COACHES, here's that complete basketball library you've always dreamed about—a series of five books covering every phase of the game in thorough, graphic detail.

Remember that fabulous Clair Bee library of four books which the coaching genius (Mr. Bee) originally wrote in 1942 and which has been a best seller for 16 years? This is a complete rewrite, bringing all the material right up to ultra modern date. Reorganized and rewritten with the able assistance of Manhattan's bright coach, Kenny Norton, the new up-dated series ought to be good for at least another 16-year run.

No individual, team, or drill maneuver or skill is left unturned. The books cover *everything* in superlative detail, offering just about the most encyclopedic coverage of the game you've ever seen.

Here's just a sampling of the material expounded in this wonderful series:

The Science of Coaching—offensive and defensive styles and comparisons, practice and training methods, developing the 2-2-1, 2-3, and 3-2 attacks; attacking zone defense, auxiliary plays, special offensive techniques, building a defense, and the coach at work.

Fundamentals and Techniques—developing coordination, footwork, screening, circulation, passing, dribbling, shooting, defense, two-man plays, three-man plays, and fast-break fundamentals.

Individual and Team Drills—drill programs for footwork, passing, dribbling, shooting, defense, cutting and screening, screen and post, dribble and post, developing the big man, fast break, offensive team, defensive team, and warm-up drills.

Man-to-Man Defense and Attack—individual man-to-man defense, team man-to-man, checking the fast break, defenses against auxiliary plays, applying defensive variations, offensive principles and screening methods, the fast break, auxiliary plays and free-throwing methods, meeting man-to-man variations, post and pivot attacks, complete possession attack.

Zone Defense and Attack—zone defense principles and formations, combination defenses, zone attack principles and formations, attacking the 3-2, 2-3, 2-1-2, 1-3-1, 2-2-1, 1-2-2, and 3-1-1 zones; attacking the combinations, auxiliary zone plays, and the clock-pattern attack.

Superlatively organized and written, lavishly illustrated with diagrams and pictures, the series represents a complete but COMPLETE course on modern basketball playing and coaching.

- *OFFENSIVE BASKETBALL*. By Frank McGuire. Pp. 336. Illustrated—photos and diagrams. Englewood Cliffs, N. J.: Prentice-Hall, Inc.

ONE of America's most fabulous coaches, Frank McGuire is a walking encyclopedia of hoop know-how. Having cut his eyeteeth on a round ball and having coached it brilliantly for more than two decades, he knows the game inside out—and he proves it emphatically in this superb volume.

Everything a coach should know on offense is packed solidly into six big sections.

Part 1 is devoted to coaching principles and philosophies, with stress on the offensive planning of the season—staff meetings, squad meetings, the first two weeks of practice, conditioning and training rules, etc.

Part 2 concentrates on the development of individual abilities—passing, shooting, footwork, rebounding, cutting, and fakes and feints.

Checklists on basketball, fencing, ice hockey, judo, skiing, and wrestling texts are available for 10¢ from Sport-Shell, Box 634, New Rochelle, N. Y.

Part 3—the heart of the book—covers the building of a style of play—theory of team offense, fast break, give-and-go, two- and three-man plays, signals, basic offense, 2-3 offense, five-man roll, four-man roll with a post-pivot, and attacking every type of zone defense.

Part 4 elaborates on preparing for attack situations—jump ball, out of bounds, control game, free-throw play, freezing, meeting the press, attacking the sag and float, and attacking defensive variations.

Part 5 offers a complete treatise on game organization, scouting, and strategy; while Part 6 is comprised of drills and practice outlines.

Within these six sections, you'll find all the niceties on every style of

play, every situation. Illustrated with hundreds of superb diagrams, single action shots, and movie sequences (taken especially for this book by *Scholastic Coach*), this book is a coach's boon.

- *HOW TO DEVELOP AN OFFENSIVE ATTACK IN BASKETBALL*. By Stan Watts. Pp. 250. Illustrated. Englewood Cliffs, N. J.: Prentice-Hall, Inc.

INTELLIGENT, articulate, sound, and imaginative, Brigham Young mentor Stan Watts has all the requisites for a top-flight technical writer, and this book clearly reflects it.

Soundly organized, excellently written, the book clearly and thoroughly expounds all the essentials needed to develop a solid, versatile attack.

Watts tips off with a chapter on variations—developing the fast break, fast break drills, building a strong set attack, semi-control game, zone attack with variations, attacking the various types of zones and presses, attacking the shifting man-to-man, attacking the sag, and special situations.

Part 2 explains how to select the best offense—single-post system, double post, triple post, open-center attack with flash pivot, five-man weave, four-man weave with pivot, and free lance attack.

Part 3 tells how to achieve objectives through break-down drills and patterns.

Part 4 is concerned with effective scrimmage, checkouts, and statistics; Part 5 covers team morale and conditioning; and Part 6 stresses related drills and lead-up games.

Part 7 details shooting accuracy; Part 8, passing; Part 9, dribbling; and Part 10, individual maneuvers. All of these four chapters offer detailed analyses on the various components of the subjects and how to develop them through drills.

A distinguished addition to the coaching archives, this book is a veritable Watts-what on modern offense.

- *HOW TO COACH FAST BREAK BASKETBALL*. By Michael Esposito. Pp. 165. Illustrated. Englewood Cliffs, N. J.: Prentice-Hall, Inc.

WITH the fast break now an integral part of nearly every team's offense, this book has extremely topical significance. The author, coaching at Wood Ridge High in Carlstadt, N. J., has devoted his coaching lifetime to its intricacies, and has poured all he's learned into this book.

The subject is covered in thorough detail, from perfecting the basic skills to a daily practice schedule. In between, Coach Esposito elaborates on:

Personnel for the fast break, pre-season training, grasping the funda-

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mentals, recognizing fast-break opportunities, styles of fast-break play, how fast-break patterns operate, blending a fast-break with a deliberate play, defenses against the break, successful fast-break strategy, defensive strategy against fast-break teams, how to scout a fast-break team, and tips on installing the fast break.

All these topics are covered in explicit detail and diagrammed at great length. Any coach interested in any phase of the subject will find all he wants in this comprehensive text.

GYMNASTICS SERIES

- **HOW TO IMPROVE YOUR APPARATUS ACTIVITIES** (for Boys and Men).
- **HOW TO IMPROVE YOUR GYMNASTICS** (for Girls and Women).
- **HOW TO IMPROVE YOUR TRAMPOLINING**.
- **ADVANCED TUMBLING**.

Edited by Newt Loken. Illustrated. Chicago: The Athletic Institute. 50¢ each.

REPRESENTING Nos. 17 to 20 in the superb Athletic Institute "How to Improve Your Sports Series", these beautifully prepared, simple, thorough, lavishly illustrated 5½" by 8½" books offer a wealth of practical teaching information for gym instructors and coaches.

Consultant for the entire series is Newt Loken, famed Michigan gymnastics coach, who is aided in the girls book by Erna Wachtel, Coach-Manager of the U. S. Olympic Team.

Apparatus Activities for Boys: Stunts on parallel bars, horizontal bars, rings, side horse, and long horse, with over 200 progressive action pictures illustrating the basic exercises.

Gymnastics for Girls: Step-by-Step lesson plans for a variety of special activities on the balance beam, even parallel bars, uneven parallel bars, and free exercises and vaulting.

Trampolining: Handsomely illustrated activity lessons including bounces, drops, somersaults, barani, and competitive routines.

Advanced Tumbling: A natural follow-up of *Beginning Tumbling* stressing advanced stunts in singles tumbling, doubles tumbling and balancing, and free exercise.

- **MODERN SOCCER (The Skills in Play).** By Walter Winterbottom. Pp. 88. Illustrated. New York: SportShelf. \$2.75.

ONE of the major problems in coaching—bridging the gap between skill execution in practice and successful use of the same skill against opponents in a game—is given special attention by the coaching director of the English Football Assn.

These new practice methods should help players use their abilities to better effect in the game. Besides delineating the basic skills and the mechanics of position play, the book ex-

plains in words and excellent photos and diagrams how they should be applied to play situations.

American distributor is SportShelf, P. O. Box 634, New Rochelle, N. Y.

- **HOW TO BE A SUCCESSFUL COACH** By Jim Bondar. Pp. 208. Englewood Cliffs, N. J.: Prentice-Hall, Inc.

WITH more and more emphasis being put on the external facets of coaching, Jim Bondar's new book has extremely topical and practical significance for coaches on all levels.

The author's (a renowned line coach at West Chester (Pa.) State Teachers College) primary aim is to familiarize the coach with the concepts of relationships within the athletic framework: to train the coach to recognize and understand the many intricate fluctuations in his basic relationships with the players, parents, faculty, press, and community.

Among the many vital subjects covered are: cementing your position with faculty and parents; the three musts in relationships—assistants, community, press; productive pre-season staff and player meetings; building and maintaining effective team discipline; preparing for the opening game; relationship with a winning squad; coaching during a losing season; halftime relationship; and relationship with players during the off-season.

All these topics are covered thoroughly, clearly, and practically. Being just as important as the actual techniques of coaching, they should be pursued with great thought and diligence. Every thinking coach can benefit enormously from this fine treatise.

- **WATER SKIING.** By Dick Pope, Sr. Pp. 242. Illustrated. Englewood Cliffs, N. J.: Prentice-Hall, Inc. \$4.95.

THE father of water skiing, Dick Pope, Sr., expounds both the history and the simple, safe fundamentals of this most exciting of sports. In words and fine photos, he explains how, if you can walk, you can learn to water ski in the matter of minutes.

He describes the correct method of take-offs, crossing the wake, riding water disc, and all the tricks—ski turn-arounds, side slide, the graceful backward swan, wake tricks, and many, many more.

For advanced skiers, there are helpful suggestions for starting a water-ski school plus tips on how to teach water skiing safely and correctly. A special chapter explains the details of staging water-ski shows. And every skier will want to read the author's up-to-the-minute account of water-skiing activities here and abroad.

- **VOLLEYBALL (A Know-the-Game Handbook).** Pp. 32. Illustrated. New York: SportShelf. 75¢.

THIS well-illustrated handbook, the joint handiwork of the Amateur Vol-

leyball Assns. of Great Britain and Ireland, covers every phase of the game simply and handsomely. It should prove helpful to the novice, experienced player, and coach alike. American distributor is SportShelf, P. O. Box 634, New Rochelle, N. Y.

- **WOMEN'S FIELD HOCKEY (A Know-the-Game Handbook).** Pp. 40. Illustrated. New York: SportShelf. 75¢.

HERE'S a book on field hockey that should find a welcome home among players, coaches, and officials. The two-color illustrations and analysis of every phase of the game explain it all. American distributor is SportShelf, P. O. Box 634, New Rochelle, N. Y.

SWIMMING FILMS

- **THE GREAT AUSTRALIAN SWIMMERS FILMED UNDER WATER** (16-mm. Loop Films). By Forbes Carlisle. Ann Arbor, Mich.: Champions on Films. \$29.75.

AMONG the most remarkable swimming movies ever made, these slow-motion under-water studies of all the fabulous Aussie world-record holders were filmed by their famous coach, Forbes Carlisle.

All of the latest swimming techniques are marvelously depicted and complemented with captions telling exactly what Coach Forbes emphasizes and looks for in each sequence.

All in all, the unit consists of 18 loops covering every event. Among the famous Australian swimmers covered are Jon Konrads, John Monckton, Murray Rose, Jon Hendricks, Terry Gathercole, and John Devitt. Also covered are outstanding Americans such as Bill Yorzyk, Tony Tashnick, George Breen, and Cyrus Hopkins.

Each loop may be used in any 16-mm. projector and the action is continuous. Coaches may study them in microscopic detail without stopping or reversing the projector.

Other superb Champions on Film subjects include:

All-Time American Collegiate Swimming Movies—18 full-length 16mm. loops of 12 great champions covering among others: Yoshi Oyakawa, Al Wiggins, Ford Konno, Clark Scholes, John Davies, Jack Wardrop, Dick Cleveland, Bert Wardrop, and Ron Alsobrook. (\$25, complete.)

All-Time American Collegiate Diving Champions—60 different dives in slow motion by nine of the world's greatest divers, including: Bruce Harlan, Al Patnik, Earl Clark, Miller Anderson, Skippy Browning, and others. (27 loops, \$29.50, complete.)

Bruce Harlan's 35-mm. Film Series: *Beginning Swimming, Competitive Swimming, Beginning Lifesaving, Beginning Diving*—four complete 35-mm. slide film kits in full color, sound or silent.

All of the latter films were produced and directed by Bruce Harlan, former diving great now diving coach at Michigan.



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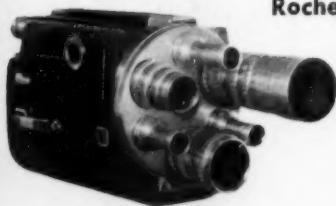
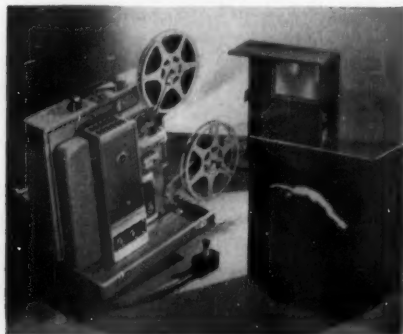
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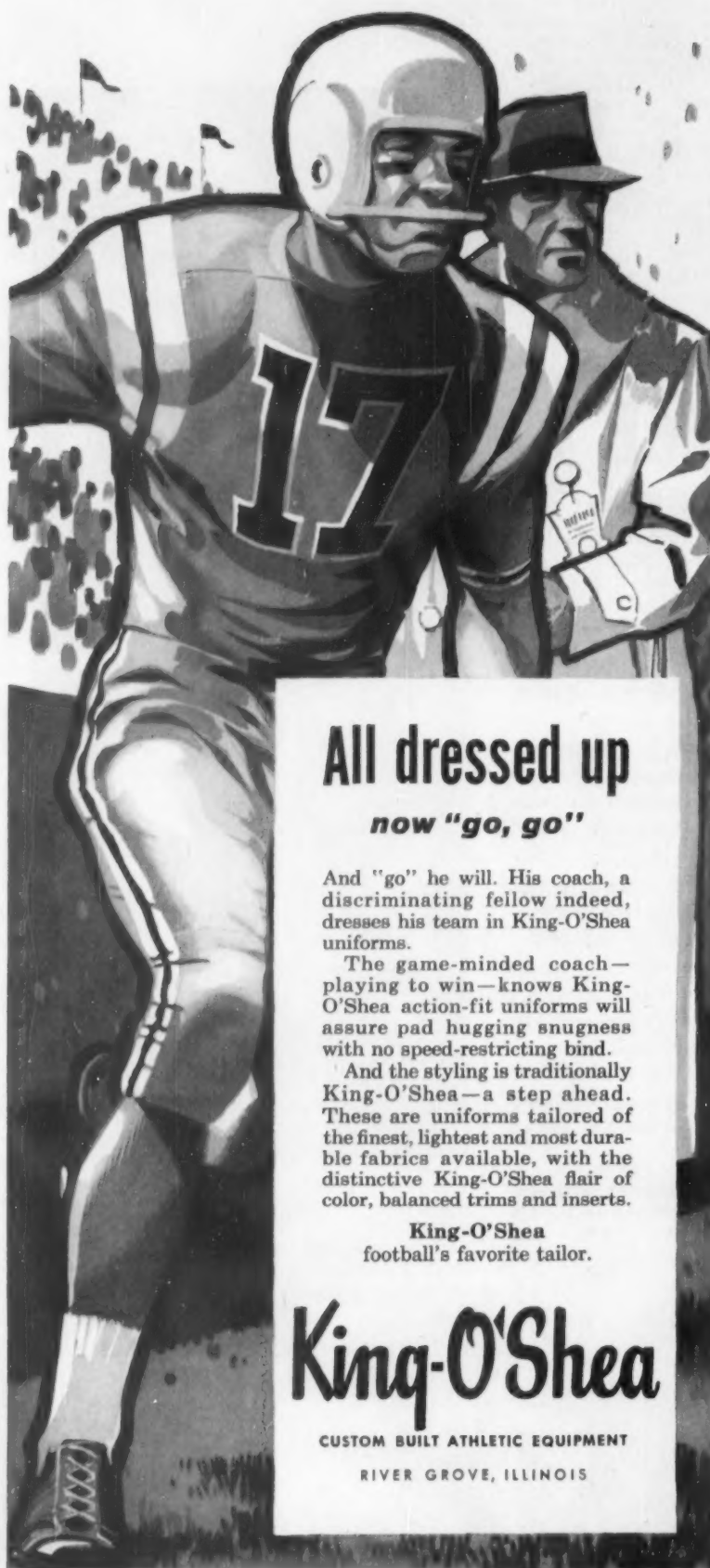
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CUSTOM BUILT ATHLETIC EQUIPMENT

RIVER GROVE, ILLINOIS

"Here Below"

(Continued from page 5)

buddy of ours, has done more for badminton than any bird past or present.

A one-time crack Canadian hockey player, Hugh broke into show business with the late great Ken Davidson. For years he played straight man in a badminton act that played all over the world.

About 15 years ago, Hugh spawned his now famous brainchild—putting the bird on ice—and prevailed upon a fine New England player, Stig Larson, to come in with him.

The act achieved instantaneous success. But even Hugh never counted on its enduring success. We can still hear him saying back in 1946 or so: "We've got a pretty good thing that ought to keep us going for a couple of years. Then we'll have to look around for something else."

What particularly endears Hugh to us is his great love for the game. Where the average professional athlete disdains any extracurricular effort above and beyond the call of his paycheck, Hugh works tirelessly promoting his sport. He has written a book on the game, authored eight articles for us, and is an indefatigable clinician. Wherever he goes with his act, he finds time to conduct clinics at high schools, colleges, recreation centers, army camps, and private clubs.

Hugh has displayed his wares to more than 30,000,000 people all over the world, and here's hoping he goes on forever. Since the guy seems to improve with age, he probably will!

WHEN it comes to rapacity and avariciousness, big league baseball belongs in the beast league. Like wolves in Santa Claus clothing, they continue to prey upon our schools and colleges, luring hundreds of kids away from their studies with cash deals.

If they were doling out \$50,000 or more to every kid, it would be one thing. You could argue that the average boy is lucky to see that much money in one bundle in his lifetime; that opportunity strikes but once and the smart kid should grab it when it comes.

But most of the youngsters are seduced by amounts ranging from \$500 to several thousands. That's merely a pittance, but the temptation is obvious.

Why, you can almost hear the

boys and their parents saying, isn't a buck in the hand worth three years in the bush? Can't Joey go back to school soon as he discovers he isn't good enough for the big leagues?

Unfortunately, it rarely works out that way. The kid keeps kicking around the minors always thinking, always hoping, he'll reach the big leagues. By the time disillusionment sets in, it's too late. He thinks he's too old to go back to school, and he simply isn't prepared to enter any lucrative field.

The NCAA offers some trenchant statistics on this score. It has found that of the 403 collegians who signed pro contracts between 1947 and 1957, less than 5% reached the majors and that 81% of college freshmen and 77% of college sophs (who sign pro contracts) *never return to school.*

The odds on a collegian who signs a Class A contract are 400 to 1 against his making the big leagues. If he signs a major league contract, the odds are 50 to 1 against him.

It's thus almost criminal for the big leagues to be pulling kids out of school and severely crippling their futures. If the pro football and pro basketball leagues can live in peaceful co-existence with our schools, there's no good reason why pro baseball cannot.

In time, college baseball could serve as a fine training ground for the big leagues, and the bat and ball moguls ought to encourage, not destroy, it. Their rapacious recruiting can open a terrible abyss. With minor league ball withering on the vine, what are the big leagues going to use as talent incubators?

The school field offers them "diamonds," yet they continue to make dross of it.


NEXT fall Phil Moriarty of Yale will learn what it's like to follow a Babe Ruth or a Ted Williams in the batting order.

Phil is slated to replace the fabulous Bob Kipthuth as Yale swimming coach—and that's stepping into a mighty big pair of fins.

Kipthuth's success story may never be equalled, let alone bettered. Coming into 1958, his swimmers showed 482 victories against a mere 12 losses and were riding a wave of 169 straight wins!

Mr. Kipthuth also had the honor of coaching our Olympic team in 1932, 1936, 1940, and 1948.

A credit to swimming and a bigger credit to the coaching profession, Coach Bob will be sorely missed. We wish the very best of luck both to him and his fine successor.



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COACHES' CORNER



Please send all contributions to this column to Scholastic Coach, Coaches' Corner Dept., 33 West 42 St., New York 36, N. Y.

THE KIDS at Dolph Schayes Basketball Camp had just been given a lecture on the value of keeping the ball off the floor and not dribbling so much. In the very first scrimmage after the seminar, one of the kids promptly went dribble-crazy. From the sidelines came the caustic voice of the Syracuse star and counselor, Jon Cincebox:

"Look, Zinc, if you want to dribble, go to Cousy's camp."

Dolph Schayes is just about the greatest foul shooter in the world, leading the NBA in 1957-58 with a .904 average. During the summer, he took his wife to the state fair in Syracuse. One of the booths featured a foul-shooting game with some nice prizes for anyone who could sink five shots in a row. Mrs. Schayes promptly got after her hubby to win one for her.

Dolph, an extremely modest fellow, demurred at first but had to give in when his spouse persisted. He then took up his position behind the line and began sinking one after another—while the huckster in the booth paled with dismay.

As Dolph cleaned the booth of all the better prizes, sinking 25 shots in a row, a large crowd gathered around him. Finally, a little old woman tapped Dolph on the shoulder and said:

"Look, Mister, I don't know who you are, but I'm sure my son would like your autograph."

In Albie Pearson's first game in the Yankee Stadium, Mickey Mantle clouted a ball behind the monuments in deep center. Albie scurried behind the big granite slabs and was lost from view while frantically scrambling for the ball. He finally retrieved the ball and threw it to shortstop Rocky Bridges, but much too late to prevent Mickey from circling the bases.

Bridges walked over to Albie and shook his head: "I waited so long out there I thought Miller Huggins was going to throw me the ball."

The third-rate fighter was getting his lumps and being none-too-happy about the whole affair.

"Stop those punches!" bellowed his angry manager from the corner.

Through battered lips, the fighter wheezed, "You don't see any of them gettin' past me, do you?"

The boxer went to a doctor because his memory was failing. The medicine man told him not to worry. With about two years of weekly treatment, his memory would return as good as ever. Sure enough, two years later the boxer was discharged with his memory completely restored.

Bouncing happily out of the office, the boxer ran into a man who stuck his hand out. "How are you, Pete," he said.

"Don't tell me your name," the fighter quickly answered, snapping his fingers. "I've got it. You're Spider Webster. I fought you in Chicago on June 21, 1948. You weighed 178 pounds, wore white trunks with a black stripe, and had a red bathrobe with 'Kelly's Gym' on the back. Right?" he chortled.

"Pete, Pete," replied the other. "Don't you remember me? I'm your brother, Harry."

When the great Satchell Paige was pitching for the Indians back in Bill Veeck's days, there were always two tickets left at the press gate in the name of Mrs. Satchell Paige. This intrigued Veeck, who had no idea Paige was married. So he stopped Satch one day and asked, "Are you married, Satch?"

To which Paige replied softly. "No sir, but I'm in great demand."

A couple of days after the Murtaugh-Gomez-Cepeda rhubarb last season, several of the sports scribes were discussing the brawl with the Giants skipper, Bill Rigney.

"I looked at the pictures," said a writer to Rigney, "and saw Murtaugh right in the middle of the ruckus. But where were you?"

"Didn't you see me?" replied Rigney with a pained expression. "I was right there in the middle."

"With the bat?" said the writer. "No," said Rigney, "with the glasses on."

The plane carrying the Pittsburgh football team to its 1958 date with UCLA developed engine trouble and eventually had to set down at Albuquerque. But the players never lost their composure.

"Coach Michelosen is going back to the single wing," one player cracked. Another quipped, "The season hasn't even begun and our new offense is sputtering already."

When "Crazy Legs" Hirsch once made a good-will tour of a prison, an inmate who coached the prison football team told him he had worked out the greatest play ever devised.

Hirsch looked at the diagram. "It's pretty good," he admitted, "except for one thing: You have five men in the backfield. That's illegal."

"I know," confessed the coach, "But you know us: We cheat."

Jack Lavelle, the obese scout, was explaining Army's dynamic new formation with its lonely end to Notre Dame coach Terry Brennan.

"What happens to the lonely end when the trainer comes out with the water bucket?" asked Terry. "Does he go over for a drink?"

"No siree," flipped Lavelle. "He sticks his hand into his pocket and whips out some K rations."

At the height of the Bernard Goldfine-vicuna coat scandal, Casey Stengel appeared before the Senate Subcommittee to testify on various aspects of big league baseball.

Later Casey bragged, "Yeah, I got that Goldfine feller off the front pages. Maybe he'll send me one of them petunia coats."

The veteran catcher walked out to the mound to discuss signals with the rookie hurler. "Well, son, what kind of pitches do you have?"

The brash rookie began itemizing his assortment: "I've got a fast ball, a slow ball, a great screwball, four different kinds of curves, a drop, two kinds of . . ."

"Whoa, there, boy!" interrupted the catcher. "I've got a glove on one hand and only five fingers on the other. How can I signal for so many pitches?"

"Well," snapped the rookie, "take off your shoes and use your toes."

Back in his days at Maryland, Jim Tatum was driven mad by a butterfingered quarterback who cost him at least three ball games. After the season ended, Big Jim was having dinner in a local restaurant when a waiter

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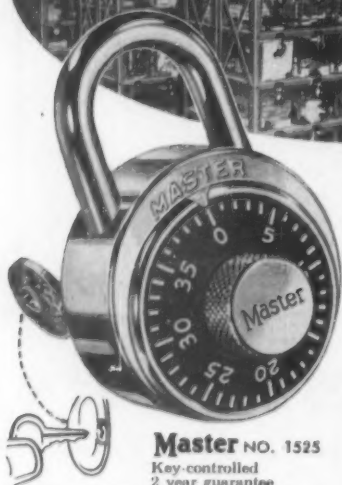
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Webster City, Iowa

dropped a mess of spaghetti down his neck.

"Oh excuse me, sir," mumbled the waiter; then, looking at Jim closely, his face lit up in recognition. "Say, Mr. Tatum," he exclaimed, "I have a relative who plays for you."

"Don't go any further," groaned Jim. "From the way you handled that spaghetti, I know exactly who you mean."

Watching one of his pitching discoveries chucking the ball all over the lot, the veteran scout, Charlie Barrett, went out to consult with him. "What's the matter with your control?" he asked.

The rookie explained, "I'm nervous today and can't keep my hand dry."

"Here's a resin bag," replied Barrett. "It will help dry your hand."

When the kid kept bouncing the ball all over the screen, Charlie went out again. "Didn't that resin bag help?" he asked.

"Gee I don't know," the kid answered. "I couldn't get the darn bag open."

Ever wonder what really goes on in a salary conference in professional sports? Leonard Koppett, *New York Post* columnist, sat in on the confab between Ben Kerner, owner of the St. Louis Hawks and one of his back-court men, Al Ferrari, and says it went like this.

Al, fresh out of the service, was greeted by Kerner as follows: "Now, Al, I've thought it over very carefully and analyzed it all out and I've got a certain figure in mind for you. I've taken into consideration the time you've been away, and just exactly how you fit into our plans. I know you can help us and assuming you come through, you're worth this certain sum. I'm sure you'll agree it's a fair amount. I don't want you to think you can make up in one lump two years of being in service, but I've calculated that in, and the figure I've got here is going to satisfy you, I think. In relation to other figures we have, you'll admit that it's a good proposition and I'm certainly not going to haggle if you don't think so, but this amount..."

And so on and so on for a half hour until Ferrari was ready to scream, "What's the figure?" Just as he was about to open his mouth, Kerner interrupted himself and said:

"So tell me—what do you think you should get?"

To kill time, a group of Los Angeles Dodgers were playing the old guessing game, with orchestra or band leaders as the category. Somebody would give the initials and the others would try to guess his identity.

"E.C.," said Gino Cimoli.

"Eddie Condon," guessed Vin Scully.

"No."

"Earl Conroy," said Pee Wee Reese.

"Nope."

The players wrestled with the prob-

lem for about five minutes and finally gave up.

"Exavier Cugat," beamed Cimoli.

Duffy Daugherty, after a woeful year: "I'm changing the name of that program to 'Where's My Line?'"

Trampolining for All

(Continued from page 32)

trampolining for all, we want to re-emphasize that: (1) it's a sport enthusiastically enjoyed by boys and girls of all ages; and, (2) its many benefits bear fruit in all directions. For example, here's what our superintendent, Mr. C. M. Sorem, thinks about our program:

"Trampoline work has a very high interest factor and has stimulated a lot of activity in the area of gymnastics and in physical education generally. Our experience has demonstrated that trampoline work can be carried on as a class activity and that practically all students can acquire the basic skills.

"Safety has been stressed in the use of the trampoline. Our accident rate in this area is as low as in any of the other units of instruction in physical education.

"Public demonstrations of the trampoline activities have been accepted with enthusiasm. The program has been instrumental in focusing attention on, and gaining support for, a sound, in-school physical education program for all students."

We might add that whole-hearted support like that given to us by Mr. Sorem has made our program successful. Further evidence of such support is apparent in the following, by football coach Ed Oliveira:

"It seems everyone enjoys jumping on the trampoline, and we feel it has earned itself a place in our athletic program.

"During the football season of 1956, we didn't have a man down on the field due to an injury. We feel this was a primary factor in our winning the championship.

"All the football players participated in a trampoline unit either prior to or during the season, and we feel it not only aided us in strengthening the boys' ankles and knees, but developed agility and endurance as well."

Our other coaches, too, find the trampoline of value to their sports. The basketball coaches find that it develops jumping ability and timing, while the track coach finds that it aids his high jumpers and pole vaulters as well as helps build endurance during the off-season.

In speaking of the benefits of trampolining, we've mentioned the administrators and the coaches. But, the primary beneficiaries are, of course, the students themselves. They're the ones who get the most out of the sport, and it's their enthusiasm that makes the sport what it is today.



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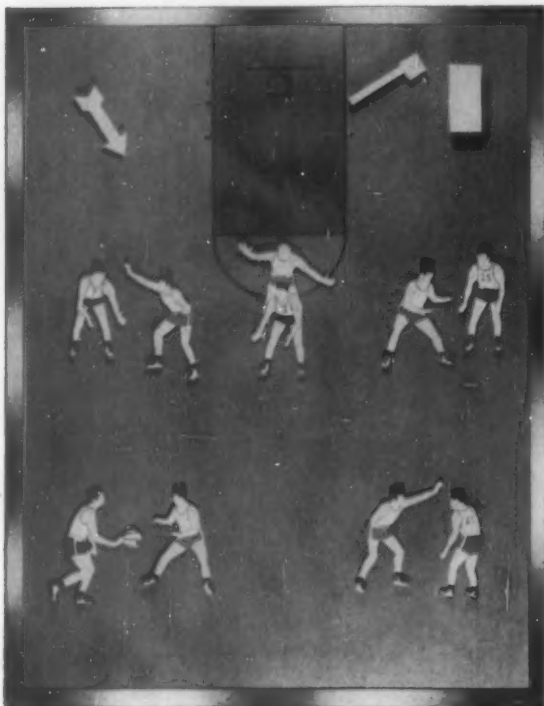
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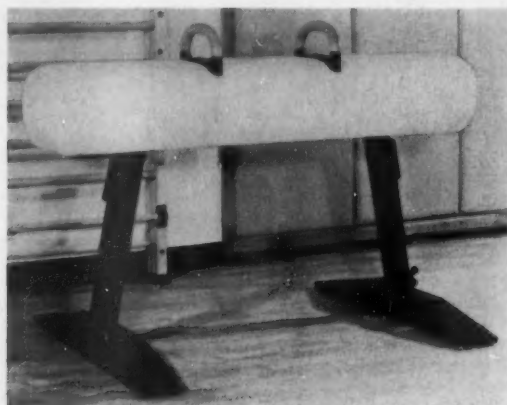
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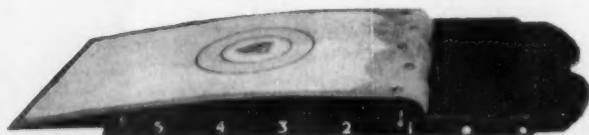
For full details on any of these products, check the listings under "NEW EQUIPMENT" in the Master Coupon on page 80.



• **MAGNETIC COACHING KIT.** Program Aids' Playmaster permits coaches to set up "real life" play situations in a minute. Features all-steel lightweight construction and combination magnetic and chalk-writing surfaces. Figures are of high-impact plastic with powerful magnetic backing for many years of active use.



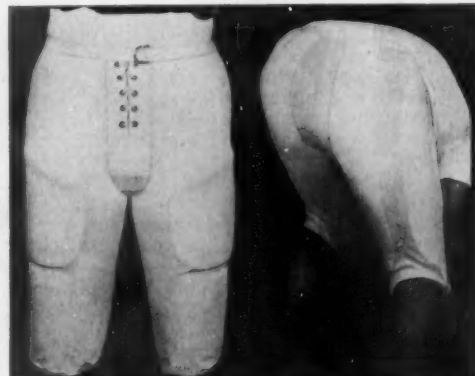
• **SIDE HORSE.** Medart's new horse features welded steel base and extra strong upright assembly finished in mar-resistant enamel, laminated wood pommel, tough elastic-cloth-backed vinyl cover in choice of 7 colors, spring latches permitting instant adjustment of height from 37 to 51".



• **FIBRE-GLASS SPRINGBOARD.** Built for maximum safety and long service, Gymnastic Supply's Hi-Fli is used in jumping the long horse. Quickly adjustable, ends costly replacement of wooden boards.



• **BASEBALL TRAINER.** Dudley's coaching aid consists of Batting Tee and Pitching Trainer. Tee fastens into center of wooden plate, with flexible rubber top for ball. Pitching Trainer features plastic-coated metal strike zone set into spring which flexes whenever hit. Zone can be raised or lowered.



• **PRACTICE PANT.** Ohio Athletic's pant has snug-tight fit with pads toward outside, affording greater protection at point of most impact. Made of tough herringbone contact cloth that won't get baggy, and double nylon-cotton going on both legs and through crotch.



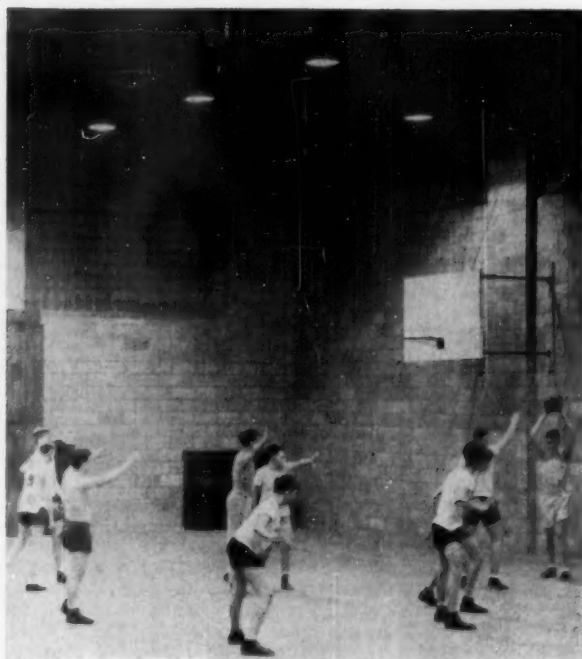
• **LIGHTWEIGHT SPLINT.** A combination of aluminum and foam rubber, Conco Surgical's Alumafoam is an entirely new lightweight material for finger and fence splints. Packaged flat, it's ready to be cut and formed to shape in seconds.



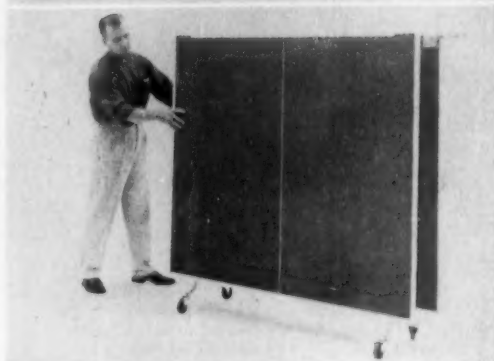
• **ATHLETIC GLASSES.** Benson Optical's new All-American safety design features expandable, adjustable head-band, shock-absorbent rubber nose piece, special contoured lenses to fit face, extra deep eye-wire channel to hold lenses securely, and streamlined ends to protect other players.



• **ELECTRIC FOUL INDICATOR.** Developed by Fair Play as scoreboard attachment, this 5' x 1½' unit flashes complete record of team and player fouls. Has control panel that can be connected to scoreboard's control panel or be operated independently.



• **HIGH-BAY LIGHTING FIXTURE.** Designed for high ceilings, Crouse-Hinds' MDS fixtures are light, efficient, easy to assemble and wire. Ideal for lighting boxing and wrestling rings and tennis courts.



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• **GERMICIDE.** Bike Web's new PCMX formula is a safe antiseptic for all skin injuries. Non-toxic, noncorrosive, non-staining, nonirritating and nonsensitizing with a high phenol co-efficient, it's ideal for skin abrasions, cuts, and strawberries. Kills infection-causing bacteria.



• **LOW PARALLEL BARS.** Lightweight, easily moved Gym Master bars have specially constructed leg sections and rubber shed bases which prevent tipping under all conditions. Low cost, it's invaluable in teaching all types of stunts.

VIBRA-WHIRL'S

BLOCKING SLEDS

... rugged construction, unique design make Vibra-Whirl sleds invaluable coaching aids ...



Vibra-Whirl's exclusive spring design produces a strong recoil from the top ... teaches blockers to maintain their balance and develop in-balance power! Three-foot spacing between pads allows freedom of movement, cutting down scrimmage ... and scrimmage injuries. Vibra-Whirl sleds are constructed of heavy channel and angle iron with vinyl blocking pads, so virtually no maintenance is required. Plan now ... put a Vibra-Whirl sled in your '59 budget.

7-MAN SLED Trains line to work as a unit. Helps eliminate "v" line-up. **\$475.00**

3-MAN SLED Works 1, 2 or 3 men. Excellent for running plays with any 3 linemen. **\$295.00**

2-MAN SLED Same design and construction as 3-Man sled. Designed to rear-up, teaches players to block up. **\$225.00**

WHIRL-POOLS

... the most valuable piece of equipment in your training room.



Vibra-Whirl's stainless steel whirlpools put your injured players back into condition ... fast ... with powerful massaging action. The force of the water activity is twenty times as powerful as any other whirlpool bath ... yet it is priced low enough for the most modest school budget. Vibra-Whirl's strong motor circulates over 60,000 gallons of water per hour ... creating a more vigorous massage that reaches the deepest muscle injuries ... and puts players back into action faster!

DELUXE MODEL **\$435.00**

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distributed exclusively by
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OF GARDNER, KANSAS

Sanitary Hints

A COMPLETE list of suggestions for maintaining clean and healthy conditions in connection with the school athletic department would approach the size of a medical dictionary.

From the many possibilities, Director Charles E. Forsythe of the Michigan H. S. Athletic Assn. has compiled a practical list which should prove helpful to all schools through display on the athletic department bulletin board.

1. Insist on properly fitted equipment. It lessens the chance of infection by irritation from loose or tight apparel.

2. Sterilize personal equipment prior to any interchange between players.

3. Provide sanitary drinking facilities. Use individual half-pint pop or milk bottles or paper cups on the field and a fountain in the gym.

4. Always have a clean, well-stocked first-aid kit on hand.

5. Keep personal equipment aired and dry between practice sessions.

6. Be sure players are cooled off and have thoroughly dried themselves before leaving locker rooms.

7. Inspect shoes regularly for nails and breaks that might cause infection.

8. Inspect showers frequently and keep them adjusted so that the possibilities of scalding and hot-water burns are reduced to a minimum.

9. Insist on the use of individual towels for each class or squad member.

10. Provide or insist upon clean, dry towels every day.

11. Permit no exchange between players of personal equipment without coach's permission; penalty to be dismissal from squad.

12. Provide proper facilities in gymnasium for spitting.

13. Insist on a warm shower being followed by a cold one.

14. Keep players off wet grounds between halves of football and soccer games.

15. Provide sideline sweaters or jackets for substitutes on rainy, cold days and outdoor night contests.

16. Inspect players regularly for infections or injuries.

17. Insist that injuries, no matter how slight, be reported immediately after received.

18. Clean lockers, showers and toilets frequently and scientifically.

19. Be sure that taping and bandaging are done correctly.

20. Do not allow ill or injured players to participate in practice or games.

21. Check weights of squad members frequently.

22. Provide a separate towel for each team member for use at timeouts or between halves of contests. Hand it to him or provide a sanitary receptacle for it. Don't allow it to touch the ground or floor.

QUALITY

Powers

ATHLETIC WEAR

Suits the Player in Every Sport

THE POWERS MANUFACTURING CO., Waterloo, Iowa

23. Launder uniforms and sweat clothes frequently.

24. Provide foot baths, antiseptic powder, or other accepted treatment for the prevention of athlete's foot.

Grasstex Runways

(Continued from page 13)

champion working out for three months now. They're delighted with its non-skid qualities for either indoor spikes or rubber soles.

After a day of much jumping, there are many tiny spike holes at the take-off. But these are closed by the next day through the natural resilience of the material. It now seems that a second application of the Mastic Weathercoat won't be necessary next spring.

For the broad jump, an official wooden take-off board was imbedded in the Grasstex exactly flush with the runway. This means no more wearing away of the material back of the board and therefore fewer injured heels.

Furthermore, this material is perfectly suited for the combination of broad jump and hop, step and jump which has just been added to the NCAA championships and which should soon become part of our college and high school dual meet schedules.

As an experiment, we intend to simply paint a white take-off "board" 20 feet from the broad jump board, as shown in the accompanying diagram. At 20 feet, no one will either hop or step on the wooden board.

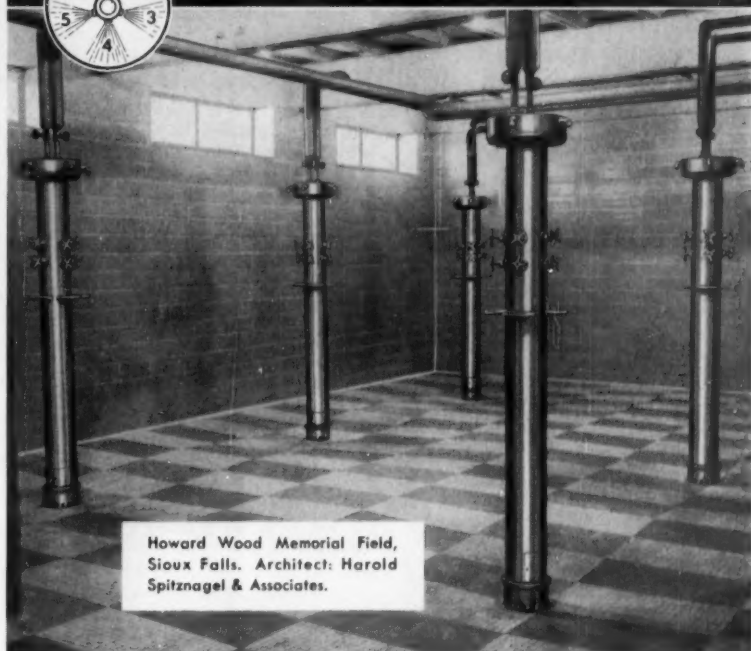
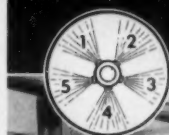
In past years the triple jump board has been a distraction, if not an actual hindrance, for broad jumpers in the Penn Relays.

It's quite possible that experience will teach us that no special board is needed even for the broad jump, and that a much wider painted area, such as the present official high school take-off board, will permit effective take-offs, no fouling, and accurate measurement. Spike marks show so clearly on Grasstex that a simple dusting of the surface before each jump would be sufficient.

In the past, Pennsylvania has used board runways outdoors throughout the winter in practicing these events. But we now feel sure that these Grasstex surfaces will prove more effective in every way. Several college and AAU meets will be held on them this present winter.

Constructor of the Grasstex surfaces at both the U. of Florida and the U. of Pennsylvania is F. C. Feise Co. of Narberth, Pa., and West Palm Beach, Fla.

AT SIOUX FALLS MODERN STADIUM



Howard Wood Memorial Field,
Sioux Falls. Architect: Harold
Spitznagel & Associates.

Multi-Person BRADLEY SHOWERS PROVIDE ECONOMICAL BATHING FACILITIES

At this well-planned memorial field used by two colleges and two high schools, every possible need was anticipated. The service building includes modern Bradley Shower-equipped dressing rooms for visiting and home teams.

The 5 Bradley Shower Columns each serve five persons—a total of 25 simultaneously and each bather has individual control of water temperature and volume.

Bradley Multi-Person Showers come to you partially assembled for quick, economical installation. Since *one set* of piping connections suffices for each *five person* Shower, another big saving is made.

Thousands of Bradley Showers are in daily use in schools, recreation and institutional fields

alone. For details and specifications write for Catalog 5601.

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The same Column can be supplied with partitions and curtains making separate stalls.



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Wake Forest College

3 days intensive instruction with live player demonstrations in actual spring practice, culminating with "Blue-White" and "Old Timer" spring practice games

Tuition

\$10, NCFA...\$15, non-members
\$25, college coaches

(Housing: special rates at first-class Washington Duke Hotel in Durham)

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Duke University, Durham, N. C.

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GYMNASTIC CATALOG



Department H
GYMNASTIC SUPPLY CO.

250 West 4th St. San Pedro, Calif.

Laundering Your

LARGE sums of money are expended every year to equip the many school and college sports squads. Most of this equipment is designed to withstand hard play on the court or field. And it's also designed for long usage, provided it receives proper care, cleaning, and maintenance.

The American Institute of Laundering has developed a list of factors that coaches and athletic directors should consider in purchasing athletic uniforms:

BASIC FACTORS

1. Sew-on numerals, if colorfast, are most expensive but give best service.

2. Screen printed markings will give a flat, surface appearance and will lose some color with each laundering. If properly applied, screen printed markings should give satisfactory service.

3. Flock marking gives a dimensional effect similar to sew-on letters. It may crack and lose some of the flocks with each laundering. However, properly applied flocking should give satisfactory service.

4. More colors and stripes in each garment offer more opportunity for bleeding and running of the colors.

5. An inherent characteristic of knitwear is shrinkage. However, a shrink-control process and proper cutting in manufacturing will make the garment satisfactory.

6. Ground-in soil and heavy grass stains cannot be removed without loss of color to the garment.

7. Entire garment, in correct fabric and color, should be tested for laundering characteristics before a big purchase is made.

8. Athletic uniforms should always be given special handling in the laundry.

Following are five classifications of items and recommended methods of cleaning each group:

Classification A: woolen warmups, award jackets, woolen baseball jackets, softball jerseys, stock basketball jerseys.

Cleaning Method: Dry clean only.

Classification B: sweaters, baseball undershirts, baseball dickie.

Cleaning Method: Use only mild soap or detergent and water not

over 120° F. Immerse garments and allow to soak about 10 minutes, then manipulate by hand (or mild automatic washer action) to force solution through them to remove soil. Rinse well in water the same temperature. Never wring or distort garments. Manipulate to proper size and shape by hand—and dry flat on towels.

Classification C: baseball uniforms, track pants, game football jerseys, game football pants, game basketball shirts, sweat shirts, socks containing wool, scrimmage vests, athletic hose, official's clothing, basketball pre-game warmups, softball uniforms (woven), lightweight all-nylon jackets, stock practice jerseys (stenciled), stock game jerseys (colored), stock game jerseys (lettered), T shirts (stencil lettered).

Cleaning Method: Machine wash at temperatures not over 120° F. (Recommended washing temperature: 110° to 120°—so-called bath temperature.) Wash with a high water level, using mild soap or detergent. Never use bleach. Rinse water should be at same temperature as wash water.

DRY-KNIT GARMENTS

Never tumble dry knit garments or garments containing wool. Athletic uniforms should be separated from all other wash and washed according to color classification. Baseball uniforms should be dried on rust-proof hangers.

Classification D: practice football jerseys (unlettered, natural and white), practice football pants (unlettered, natural and white), sanitary cotton hose, T shirts (unlettered), supporters.

THIS article is reprinted from the superlative booklet, "How to Budget, Select and Order Athletic Equipment," prepared and distributed free of charge by the Athletic Goods Mfrs. Assn., 209 South State St., Chicago, Ill. Several helpful additions have been made through the cooperation of the fine specialists in the laundry field, the UniMAC Co. of Atlanta, Ga.

Gear

Cleaning Method: Machine wash with water at 140° F. using soap and detergent plus chlorine bleach according to the directions on the container. In the case of very badly soiled garments, repeat the process.

Classification E: sideline coats and capes.

Cleaning Method: Clean outer surface with sponge or cloth, wet with soap or detergent solution. Remove solution with sponge or cloth moistened with clear water. Never use cleaning fluids.

SPECIAL CONSIDERATIONS

Special Notes: Wash whites separately. Never mix different colored garments in the same load. Tumble drying at excessive temperatures causes more shrinkage than other methods. High water level lowers mechanical action in washer and reduces the possibility of damage to garments.

Temperatures lower than 100° sacrifice washing ability and won't remove perspiration residues, heavy soiling, and surface stains. Wash temperatures between 110° and 120° F. are recommended. Heavy grass stains and ground-in soil may still remain after using 120° F. washing temperature, but most coaches prefer to have grass stains rather than lose the color or have the numerals and stripes become illegible.

NO BLEACHING

Bleaching should not be done. Any piece of athletic equipment that contains some wool should be treated as a woolen garment.

Tumbler drying varies in proportion to weather conditions, degree of extraction, degree of heat, size of tumbler, weight of load, and type of fabric. Football pants with rubber or plastic inserts should be tumbler dried in cool tumbler, whites and synthetics 110° to 120°, loose-weave woolens 120° to 140°, and tight-weave woolens 140° to 160° to prevent shrinkage.

Never use cleaning fluids on items containing rubber. As temperature increases, so do color and shrinkage problems.

Another Season, Another Reason

... for Installing

Heavy Duty UniMac

Laundry Equipment



The constant need for a reliable, economical method of laundering uniforms and other athletic washables is solved with UniMac laundry equipment. UniMac, the revolutionary washer-rinse-extractor combination, gives fast, economical, trouble-free performance.

Here's why you need UniMac —

- Saves on commercial laundry service—no delays, no counting, no checking, no losses!
- Assures clean laundry daily—eliminates health hazards and boosts morale!
- Reduces inventory and replacement of pants, jerseys, socks, towels and other washables!
- Students can operate!
- Pays for itself out of savings!

The UniMac Twin washer-rinse-extractor combination is rugged commercial equipment. It processes 120 lbs. per hour in only 10 sq. ft. of floor space. Comes fully equipped with heavy duty electrical and plumbing connections. Easy and inexpensive to install, maintain and operate.



Get all the facts—WRITE TODAY, Dept. K-19

UniMac COMPANY

723 Ponce de Leon Place, N.E.

Atlanta 6, Georgia

Twin-Balconied Gym-Auditorium

(Continued from page 11)

separation. The divided gym and the balconies (25½' wide by 104' long) provide two teaching stations for both boys and girls.

To each side of the students' locker rooms are the physical education offices with showers and toilets. The gym ventilating system is located off the east side of the gym in an area equivalent to a third floor.

The ceiling is acoustically treated and has 40 lamps furnishing 40,000 watts of lighting.

The east wall of the gym provides two lobby entrances where trophy cases, ticket sales room, public toilets, and two concession stands are located.

A girls physical education classroom (29' by 21') is being utilized now for driver-training classroom instruction. This room previously served as a G.A.A. equipment room. This classroom is to the east of the girls locker and shower room.

Adjoining the boys locker rooms is a faculty and officials dressing room (25' by 16').

In the underground area under the boys physical education area is found the athletic department facilities. Dressing rooms for the visiting team, sophomore team, and the varsity squad are located in this area.

Coaches offices, a physical-therapy room, a classroom (32' by 22'), three equipment rooms (for football, basketball, and track-wrestling), and a drying room are also located in this basement area.

A public address system can be used at various places.

The hard wood flooring is laid on a waterproof cement floor with sleepers secured to the cement. A 1" softwood diagonal flooring is under the 3" maple hard court, and a 3" expansion joint around the entire outer edge allows for expansion. The locker room floors are cement

with showers of ceramic tile.

West High is located on a 35-acre campus. This provides the following activity units: four football regulation practice fields, one baseball dia-

mond, space for an ice skating pond in the winter, a practice area for the school's marching band and three playfields for the girls. Tennis courts are enclosed by special fencing, as is the football game field.

This September, new steel pre-cast concrete bleachers were constructed in the football stadium for 4,700 spectators at a total cost of \$50,000. Press facilities were also provided, with a heated, lighted



Athletic team classroom (32' by 22') situated in the basement area



Specially equipped physical therapy room located off the coaches office

EQUIPMENT SUPPLIERS

Lighting—Wadeford Electric
Apparatus—Medart
Lockers—All Steel Equipment
Bleachers—Medart
Backboards—Medart
Electric Partitions—Richards-Wilcox
P. A. System—Dukane
Flooring—Maple Flooring

THESE TWO REALLY WORK!

Designed especially for basketball players

IF A BRACE WILL HELP—
THIS ONE DOES IT!



HEAVY-DUTY KNEE BRACE
SMALL—MED.—LARGE—EX. LARGE

Both of these braces are inflatable to any desired pressure and are completely adjustable.

These same braces have been used for years by leading coaches and trainers throughout the country.

The ANKLE BRACE can be used in place of taping. Wonderful "off the floor" support.

The KNEE BRACE gives support where you want it and as much pressure as is desired.

No hinges, ball bearings or other metal gadgets. Fits either leg.

Thousands in use now. Order direct, write for catalog, or see your dealer today.

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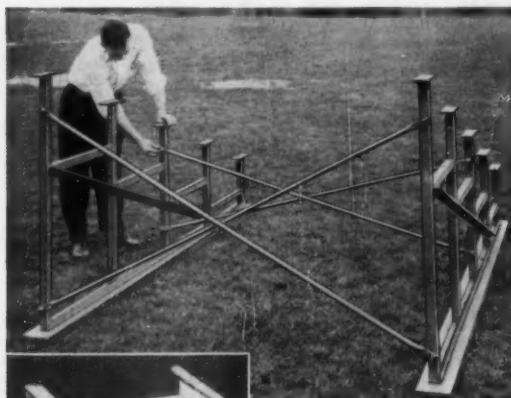
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ADJUSTABLE ANKLE
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WILL FIT EITHER ANKLE

For these shoe sizes:
7 to 9—small
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Also extra large

Very effective when worn to hasten recovery from sprain or injury.



(ABOVE) Assembly of steel structure is completed by attaching cross braces to frames with wing nuts.

(LEFT) Optional slide plank bolders for frequently dis-assembled bleachers.



(ABOVE, CENTER) 5-row Budget Master bleachers. (ABOVE, RIGHT) 10-row section with guard rail. Elevated front cross aisle and 15-row assembly also available.



• YOUR OWN maintenance crew can quickly assemble Budget Master steel bleachers into 5, 10 or 15-row sections. No tools are needed. Attached with simple wing nuts, cross braces connect standard 5-row support frames into a strong, rigid structure.

A 5-row, 6-ft. Budget Master seats 20 persons economically. For more capacity, increase the length or add rows. Budget Master can provide over 10,000 good seats around a football field.

Welded steel Budget Master costs about the same as an all-wood bleacher. Investigate today!

ASK FOR RECOMMENDATIONS!

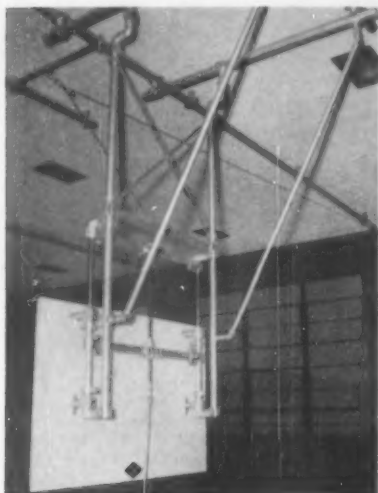
• Without obligation, Safway seating engineers will study your needs and suggest an economical set-up. Send details. And write for free BULLETIN 41.



SAFWAY
STEEL PRODUCTS, INC.
6220 W. State St., Milwaukee 13, Wis.

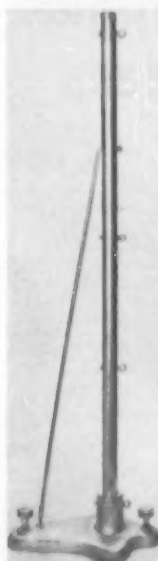
AUSTIN-CEDAR BASKETBALL BACKSTOPS

Swing-Up, Adjustable 8½'-10'

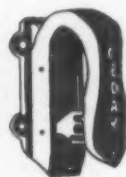


Designed for Both Tall and Small. See catalog for complete line of Adjustable Backstops, Swing-Up or Wall-Braced. All fittings engineered and precision-machined, made of malleable iron and tenzaley. Sturdy, quiet and maintenance-free installation. Can be operated by an 8-year-old.

ALUMINUM VOLLEYBALL STAND



Regulation height for volleyball, badminton and tennis. All-aluminum with cast base fitted into two non-removable screw hooks, assuring non-slip rigid standards.



PRESSURE MAT HANGERS

Cast iron, aluminum finish, 8" high for 1"-2" mats.

Write for Catalog of Complete Line

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Gymnasium Equipment Co.**

701 BEDFORD AVENUE, BELLMORE, N. Y.



Cement-floored students locker room



Basketball equipment storage space

press box. Future plans call for a cinder track of eight lanes to enable West High to hold the district track meets.

Kenneth Zimmerman, Sr., athletic director and head football coach, reports that if changes could be made in the physical plant after six years of use the only change he'd desire would be to have the entire setup made larger to accommodate

the ever-growing enrollment.

Right now, the department is handling the boys and girls program adequately. But in a few years additional space will have to be provided.

It's also hoped that when the swimming pool is added a room over the pool area will be provided to accommodate the wrestling program.

The Challenge of Fitness

(Continued from page 42)

God do the worrying while we sleep. As the old mammy put it in explaining her serenity and long life, "When ah wuks, ah wuks haard, when ah rests, ah sits loose, and when ah worries, ah jes goes to sleep."

But the greatest of these, the spiritual, is the apex, the top, the goal built on the other three. It gives the philosophy, the will, the aim, the purpose, and the motif for clean, wholesome living. It motivates, it stimulates, it encourages the individual to realize anew that his body is a temple of God, and that he has great responsibilities to make it a suitable house for a dedicated Christian spirit.

The Hawaiians know this and have an interesting national motto—"The strength of the land is in righteousness." Spiritual health is indispensable.

When we look at our own efforts, our own programs, it's sometimes like the old farmer who was listening to his farm bureau agent telling him he should get educational material from the College of Agriculture. He listened patiently and then

said, "Shucks, I don't need that! I ain't farmin' half as well as I know how now!"

Is it possible that we can make greater contributions to our young people than we're doing?

The major challenge to the profession is providing a quality of education that promotes vigorous, healthy, and happy activity; that helps to develop alert, clear thinking; and that offers the opportunity for our students to learn to make decisions, to cooperate with others, to understand and practice good sportsmanship at its best.

Basically, it means a tremendous challenge to everyone in a position of leadership, simply because the great majority of the youth-serving agencies, including the elementary and secondary schools, aren't meeting the needs of their pupils in the area of physical education and fitness.

We must do more to get boys and girls, men and women ready to take care of their own fitness, their own recreational needs as responsible citizens in a community. And as we improve our contributions, let's ex-

pand them further by teaching appreciation—appreciation of fitness, of sports, both as a participant and as a spectator, and extend our teaching as far as possible to the faculty, to the community, to the alumni of our schools by expressing our philosophy of fitness, by presenting our programs and our future plans.

Most of the present concern over the matter of youth fitness has been generated by the personal interest of President Eisenhower and the numerous conferences which have followed. A fourth of the states have already held some sort of a state conference to study the problem of youth fitness in their areas, and 20 states, including most of these, have set up Governor's Advisory Councils to continue and expand the program.

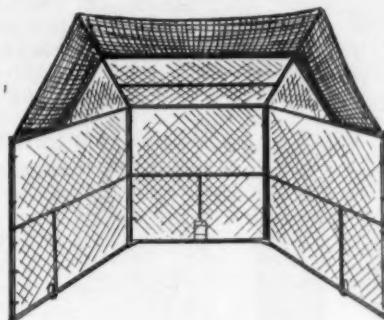
Our modern Paul Revere of Fitness, Dr. Shane MacCarthy, has flown the length and breadth of the land, preaching the gospel of fitness . . . and these are some of the results. There's a ground swell of interest and we must seize this opportunity.

The challenge of modern living and the great increase in tension have brought new emphasis on fitness. The causes are the defects arising from many of our so-called, and probably misnamed "blessings"—mechanization, loss of muscle-building chores, the gadgets; lack of opportunity to enjoy woods and fields; automobiles and school busses have outmoded walking; television, radio, movies, spectator sports, and emphasis on competitive sports for a few, insistence on winning teams by parents, other adults, coaches; the absence or inadequacy of physical education programs in secondary schools, in colleges and universities; the narrowness of the intramural programs—all have contributed to minimizing the kind of activity necessary to develop and maintain sound fitness in the individual.

Fitness for living in our society is an aim of education, a means to effective citizenship. Surely, this is the same objective we have in physical education. A general objective of our program would be a means to developing democratic attitudes and skills, through having our students learn to work cooperatively with their classmates. It would also include sharing in class planning, which would be a means for accepting responsibility for fulfilling a definite assignment.

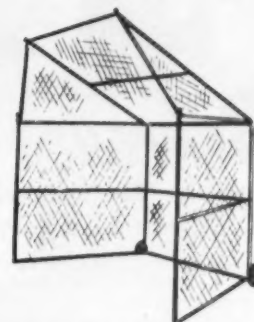
Morris, in a recent issue of the *New Republic*, asks the question, "Does Sport Equal Fitness?" and his answer, well-documented, is

PORTA-WELD SR. BASEBALL BACKSTOP. Front opening 12' 8" wide, 10' high. All-galvanized extra heavy construction, knocks down for shipping and storage. The sides are covered with #9 galvanized wire, front of canopy is covered with 72 thread tarred net. Backstop rolls on three roller bearing wheels.

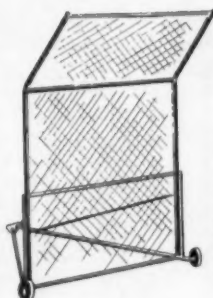


AUSTIN BACKSTOPS

*Unsurpassed for Quality,
Durability, and Economy*



PORTA-WELD JR. BASEBALL BACKSTOP, extra heavy galvanized construction, built to last for years. Rolls on roller bearing rubber-tired wheels. Front opening 10' wide, 9' high.

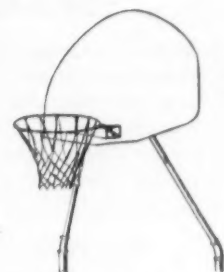


PORTA-WELD FLAT BACKSTOP. A most useful portable flat backstop. Unit rolls on two roller bearing wheels. All-welded galvanized construction covered with heavy galvanized wire. Over-all height 10', width 6', over-hang 3'. Knocks down for storage or shipping.



PORTA-WELD MAT RACK. All-welded galvanized construction. Unit rolls on heavy rubber composition casters. Height 6'2", length 93". (GREEN TOP) Adjustable sliding hooks are above eye level. Rack will take 12' mats.

PORTA-WELD UNIFORM RACK. (Not illustrated) All-welded construction. Main frame is of 1 3/4" galvanized pipe, bracing of 3/4" pipe. Rack stands 6' high by 6' in length.



TWIN-SUPPORT OUTDOOR BASKETBALL GOAL. An extra sturdy welded goal. The vertical supported pipes are 3 1/2 inches in diameter. The angle pipes are 3 inches in diameter. Fan shaped backboard extends 2 1/2 feet forward. All pipes and fittings are hot dipped galvanized.

See our exhibits at AHPER convention Jan. 12-13, Booth 2, Rochester,
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Portable Water Bubbler

... for All Sports

Recommended by Health Authorities and Coaches • Carries cool, safe drinking water anywhere • Streamlined Stainless Steel tank • Rubber tired wheels for easy rolling • Two modern sanitary push-button fountains for steady pressurized water flow. Easy to fill, ice, clean. Five gallon capacity.

Bekrens MFG. CO. Inc.

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BASKETBALL SCOREBOARDS

- ★ Synchronized Flashers
- ★ Direct-Read Timer
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- ★ Vibrator Horn
- ★ Remote Control
- ★ Welded Frame

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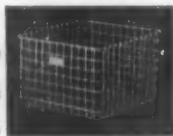
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LOCKER BASKETS

AND

SPACE SAVING UNIFORM HANGERS



All welded steel wire. Molten Metal dipped (tin alloy) after fabrication to insure maximum corrosion resistance. Available in sizes to meet your locker room needs. Write for descriptive literature and school prices.

**AMERICAN
WIRE FORM CORP.**

267-273 Grant Ave.
Jersey City, New Jersey

"No." He discusses the loss of physical activity to the boy or girl who has been made a spectator by the highly selective program . . . a program which too often has great concern for a few at the expense of the many.

The result is almost always too little emphasis on total school or community participation in many areas including athletics, dramatics, arts and crafts, etc. Encouraging trends are the tremendous increase in high school participation in cross-country, wrestling and baseball, and more participation in swimming and gymnastics. The growth in numbers of frosh-soph and junior varsity teams is also apparent.

Nash states that more than 70% of recreational activities after the age of 21 were enjoyably engaged in before the age of 12. Adults CAN develop new recreations, but the overwhelming tendency is to revert to familiar activities. Therefore, the athlete trained only in football, baseball, or basketball is very likely to become a spectator before he reaches his 30th birthday.

Many schools are substandard in facilities, equipment, and leadership, and many of them have no organized program of physical education whatsoever. At the height of the World War II, only half of our boys and girls were being exposed to any kind of physical education or physical fitness program. Today, relatively few young people have opportunities to participate in good programs.

At a period in our history when we need emphasis on fitness as much as, and very likely more, than at any other time we're getting less. Attacks on the service or required programs in colleges and universities are prevalent, so much so that at the 1958 College Physical Education Association convention and at the American Association for Health, Physical Education and Recreation convention, considerable emphasis was placed on meeting and defeating such attacks.

It was agreed that (1) a good program, (2) teaching appreciation and understanding, and (3) good public relations were crucial matters to consider. Many of us have generally been lax or even negligent in these matters. "We can't do today's work with yesterday's tools and be in business tomorrow."

Man is a complex creature, and we've already pointed out that his physical development cannot be isolated from the other aspects of his personality. It's well known that health and physical well-being, or the lack of it, has a highly signifi-

cant effect upon our mental, emotional, social, and spiritual fitness.

Likewise, each of these, in turn, has its influence upon physical well-being. *Purposeful Activity* is the key to physical fitness, to social fitness, good citizenship, mental, emotional and spiritual health.

Who must do the work? All of us! It's a problem affecting all communities, all teachers, all pupils, all citizens. But we must start in our own situation, at the grass roots levels . . . must start with boys and girls, with young men and women who've already passed the first test, the health examination. We need programs that:

1. Inspire more interest, attention, and intelligent action at school, and at home, and in the community—home exercises, family, school, and community activities, walking, hiking, playing together, bicycling . . .

2. Include better school curricular and extracurricular activity programs such as intramurals and recreational activities. Where the school does a good job of teaching skills in areas which may be enjoyed and participated in outside of school years, greater participation with greater satisfaction usually results.

3. Include organized activities

OLSON

TRACK AND FIELD SCORE CARDS

• You can't run your meets without an efficient system of recording results. This is the original recording and filing method in field.

• These cards are sold in sets. Each set consists of one card for each event plus a Summary Filing Folder for recording results and other pertinent data.

• Start a permanent record system by ordering a set for each of your meets.

90¢ per Set

CARL OLSON, Box 567, Patchogue, N. Y.

CAMP STAFF WANTED

Long-established children's co-ed Camp in the Berkshires needs Head Counselor for Girls' Division and experienced health ed teachers or seniors as general counselors, group leaders, swimming head, baseball and basketball coach, tennis, golf, archery, music, dramatics.

Working couples considered

CAMP BIRCHWOOD

67-38 108 St., Forest Hills, N. Y.

in communities, neighborhoods, churches, schools, communications agencies and others . . . WE MUST FURNISH LEADERSHIP . . .

4. Emphasize outdoor activity, camping, crafts, etc.

5. Give youth responsibility for much of their own fitness, developing their initiative and capacity and sense of responsibility, by insisting that they participate in planning their own activities under proper supervision.

6. Account for every young boy and girl in the community to be certain they're cared about and cared for. Help them know their potentials.

7. Develop attitudes and skills in relaxation.

8. Are coordinated, purposeful and dynamic.

IS CHALLENGE IMPORTANT

Is this challenge an important one? The great educator Horace Mann once gave a talk at the dedication of a school for wayward boys that cost a million dollars, in which he mentioned the great cost and effort behind the building. Among other things, he said, "If all this were done to save one boy, it would be worth it."

Afterwards, someone criticized him and asked if he hadn't exaggerated. "Do you think," the critic said, "that all of this could be justified to save one boy?" "Why yes, sir!" said Dr. Mann, "it would be if he were my son."

Remember that if there's:

*"No vision (and) you perish
No ideal and you're lost
Your heart must ever cherish
Some faith at any cost.*

*Some hope, some dreams to cling to
Some rainbow in the sky
Some melody to sing to
Some service that is high."*

Harriet du Autemont

Limited campaigns based on dramatic disclosures of our weaknesses probably won't affect American fitness very much. However, they should spur us on to the development of thousands of well-planned school and community programs to suit the special conditions and to meet the special needs.

We stand on the shoulders of those who have gone before and reach out toward the future. What will OUR share, OUR contribution, OUR responsibility be to the youth of America? Perhaps we can begin by being a good example of all-round fitness ourselves—"practicing what we preach."

You get total participation in your PHYSICAL EDUCATION PROGRAM with a Free Harvard Kit for Gold Medal HARVARD TABLE TENNIS TOURNAMENTS

1. . . mail completed coupon today.

HARVARD TABLE TENNIS CO. 60 STATE ST. BOSTON 9, MASS.
Gentlemen: In order to run a table tennis tournament please send us the FREE Harvard Tournament Kit.

10

SCHOOL NAME _____
POSITION _____
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CITY _____
ZONE _____
STATE _____

2. By return mail get Free Harvard Tournament Kit...



3. plus Harvard's Table Tennis Teacher



4. Harvard Tournament Charts



5. Report Forms . . . So we can send winners a Harvard Gold Medal

Report Form

NAME _____
SCHOOL _____
CITY _____
STATE _____



and winner's certificate

HARVARD
Table Tennis Co.
60 State St., Boston, Mass.





"Jim-Flex" mats are filled with 100% safe, hair layerfelt. Excellent cushioning qualities. Triple knotted tufting with double strong cord. Heavy duty handles. You'll be surprised at the downright low cost of "Jim-Flex" mats . . . our top quality line!

LOW BUDGET "Standard" mats, filled with high quality, resilient felt . . . 100% safe and needle-free . . . can save you even more money!

Write today for complete information about National mats, including goat hair, new rubberized curled hair, vinyl plastic heat-sealed seamed mat covers, and accessories . . . and "Mat-Hide", the new scientific, tough, smooth-coated covering for mats in ivory, blue, green, red and grey. Also heavy white duck.

National mats come in all sizes direct-from-factory at LOW, MONEY-SAVING PRICES!

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Sports Company
364 N. Marquette Street Fond du Lac, Wisconsin

TREAT INJURIES! WITH PORTABLE NON-ELECTRIC WHIRLPOOL BATH

Treat sprains, stiffness, sore muscles and other conditions requiring moist heat and massage. Set up in shower area (illus.) or bath tub. Recommended by coaches, trainers, doctors. Unconditionally guaranteed.

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If not available at your Sporting Goods Supply Store, write for 10 day free trial, or literature.

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**BASKETBALL
STEEL CHAIN
NETS**

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outdoors or indoors

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- ✓ ALUMINUM BATTING TEES

• Send for Free Catalog •

JAYFRO ATHLETIC SUPPLY CO.
Dept. S, Box 1065, NEW LONDON, CONN.

Asphalt-Composition Runways

(Continued from page 13)

grade and level. Since asphalt cannot be put down in wet weather, plan your construction as to weather and needed time interval.

The top dressing formula mix is as follows:

A-1 Sheet Asphalt—one ton, one batch.

700# Fine Sand (passing #30 and retained on #200 sieve).

930# Plaster Sand.

180# Stone Dust.

190# Asphalt Cement.

60—70 Penetration.

UNWISE TO SUBSTITUTE

It isn't wise to substitute for the specified materials in the formula. Each material is used for a purpose and the end result will justify its use. The reason for the fine grained materials is the advantages they offer in surface friction and the smallness of the holes resulting from the shoe spikes; while the 60-70 value of penetration is to allow the spikes to penetrate the surface without chipping it in cold weather or tearing it out in hot weather. Also, the surface won't bleed during hot temperatures or become sticky.

From competitive experiences on the mats, the athletes have made certain requirements necessary.

The high jump mat should be a half-circle with a minimum radius of 25 feet. This will allow two to three strides on the mat before take-off. The one-eighth-inch board spike is used in the shoe plus a heel spike of the same length. Use of a plastic heel cup is advisable. Rubber-soled shoes can be used at low heights.

The broad jump mat should be a minimum of four feet in width and 125 feet in length. A width of five to six feet would be better, and check-steps could be run along the sides which would give all of the mat equal and more lasting use. With either width mat, a pit could be laid out at both ends for wind purposes.

The take-off board should be installed before the top surface so that the surface can be brought to the level of the board. The one-eighth inch board spike and heel cup are used. Rubber-soled shoes can be worn during the warm-up and much of the practice.

The pole vault mat should be a minimum of four feet in width and 125 feet in length. For wind purposes, a pit can be put at either end. If a double runway is desired, make the width eight feet with center line and an off-set pit at either end.

The vaulting box should be of metal and installed to the proper height before the binder coat is put down. The top surface can be easily finished up to the edges of the box. The one-eighth board spike and heel cup are used, and rubber-soled shoes can be used for warm-up and much of the practice.

The shot put and discus mat should be one to two feet larger than the diameter of the circle. The circle can be painted on the mat or be of the flat metal type. If the metal circle is used, drill four equally spaced holes just large enough for a large spike nail. When the circle is placed in its proper position on the mat, drive the nails through the holes in the metal rim into the asphalt. This will keep the circle from having any lateral movement. The nails can be easily taken out to remove the circle and the same holes used to reinstall.

Use only rubber-soled shoes on the mat, as any twisting or dragging of spikes will excessively tear up the mat. It's wise to have a coco type mat next to the mat to wipe the soles of any dirt or small particles.

TRIM EDGES WITH AIR HAMMER

The mats in the shot put, discus, and high jump should be constructed about six inches larger than desired. In the roller operation, the roller will go off the mat and have a tendency to break down the edges. After the asphalt has hardened, the edges can be trimmed with an air hammer using a broad-pointed blade.

The edge of the mat shouldn't be exposed to the weather and should be covered with dirt or sod. While the roller is in operation, it may drip gasoline or oil, and these small spots should be replaced with the hot mix or they'll always be soft.

The asphalt top surface is now being used satisfactory in every section of the country. As track and field areas are being rebuilt or newly

**IF YOU CAN FIND
LOWER PRICED PRACTICE
PANTS WITH ALL THESE
FEATURES . . . BUY THEM**

Designed to the specifications of coaches in every section of the country, this new practice pant has a snug-tight fit with pads moved to the outside thus giving greater protection where hard blocking blows are the most frequent.

The rugged contact service cloth is triple stitched at the seams and unlike knit pants they will not become baggy nor develop runners even after long abusive daily contact. Note all the really desirable points in this fast growing favorite.

GET THE REAL FIT

- WIDE FLARE—COMFORT FIT AT BACK OF KNEE
- WHITE TOUGH HERRING-BONE CONTACT CLOTH—WON'T GET BAGGY
- DOUBLE NYLON AND COTTON GORING ON BOTH LEGS AND THROUGH CROTCH
- THIGH POCKETS ARE HUNG FROM THE ATTACHED BELT
- SNUG FIT RUGGED CONSTRUCTION WON'T BAG OR RUN AFTER HEAVY USE
- THIGH POCKETS BUILT MORE TO THE OUTSIDE (WHERE CONTACT IS GREATEST).

Compare this pant with the ones you are using—when you see our prices it will really be a shocker. Get a trial pair now. You must be completely satisfied. Your dealer can supply you.

OHIO ATHLETIC SPECIALTY CO.
133 Buckeye St. Elyria, Ohio

DOUBLE NYLON AND COTTON GORING ON BOTH LEGS AND THROUGH CROTCH.

THIGH POCKETS ARE HUNG FROM THE ATTACHED BELT.

WHITE TOUGH HERRING-BONE CONTACT CLOTH—WON'T GET BAGGY.

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RECREATIONAL ENGINEERS

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DESIGNERS AND BUILDERS

OF ALL OUTDOOR ALL-WEATHER ATHLETIC AND RECREATIONAL FACILITIES

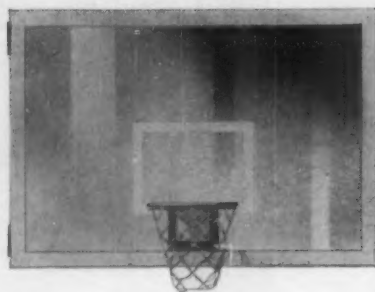
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**Contractors and Builders of the NEW GRASSTEX RUNNING
TRACK for the UNIVERSITY OF FLORIDA—and RUNWAYS
for the UNIVERSITY OF PENNSYLVANIA**

complete information and costs without obligation

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Stronger 3 Ways

1. Extra-heavy angle iron frame: provides rigid support without cross bracing.
2. Back plate larger than face plate: distributes shock and strain over larger area.
3. Face plate bolts spaced 8" apart: heat-treated glass retains full strength.

NURRE ^{All-Glass} BANKS

Fully approved by the National Basketball Committee for high school, college and professional games. Surprisingly low in cost, easy to install . . . sure to provide increased seating capacity, livelier rebounds, a better game for spectators and players alike. And, all Nurre Banks are positively guaranteed against breakage in normal use.

In addition to the fan-shaped and rectangular banks shown above, Nurre offers a low-cost rectangular model with a 12" wood panel across the bottom. Send for free illustrated booklet today. And remember to order your goals from Nurre, too, stating type of bank—all-glass or with wood strip.

The Nurre Companies, Inc.

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Makers of Glass Banks Since 1924



...a more durable,
tougher,
stretchfree

**GOLD MEDAL
or INVINCIBLE**

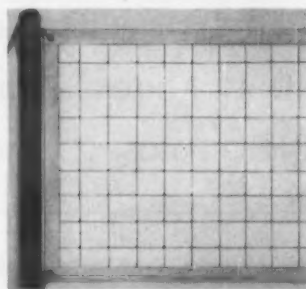
LINEN volleyball NET

QUALITY...at low prices you can't match!

Wherever it has been sold and used, this improved volleyball net has won recognition for its superior construction, durability, value. Made of tough linen seine twine that defies weather, stretching. Offered in two types in both of America's leading lines of sports netting...

GOLD MEDAL Style #LD-3230-VBC (steel cable),
and #LB-3230-VB (rope cable).

INVINCIBLE Style #LB-3230-VBC (steel cable),
and #LB-3230-VB (rope cable).



NO SAG—Tie strings hold
net straight and even.

SEE YOUR DEALER



"A Net For Every Purpose and a Purpose for Every Net"

THE LINEN THREAD CO., INC.

418 GRAND STREET • PATERSON 12, N.J.

New York Boston Chicago Baltimore San Francisco

constructed, the surface is gaining in popularity. The directors of large meets are being requested to install the surface to offset possible foul weather. Even high school associations are recommending its use for local and state championship meets.

The surface has also proved its worth under all weather conditions. It's possible to work out the entire team during the early spring weather and not neglect the field events because of poor footing. The occasional summer showers don't end an afternoon's workout.

CONSISTENT FOOTING

Check-marks don't have to be reset during competition due to torn-up runways. A confidence established from working in a circle of consistent footing can be carried over to other asphalt mats. The check-marks established on one mat can be easily transferred, saving time and energy. Circles don't have to be raked and tamped to maintain adequate footing.

During the early development of the asphalt surface, there was a question of possible shin splints. In five years of use, I haven't experienced one case of shin splints or have I heard of such from others using the mats.

The Purdue Field Records are a result of eight dual meets, two Indiana state college meets, and one Big Ten conference championship during a four-year period. In the shot put and discus, only rubber-soled shoes have been used and the records are 170 feet in the discus and 53 feet 10¾ inches in the shot put. These shoes have proved satisfactory and eliminate the need for spiked shoes:

INDOOR BOARD SPIKE

In the high jump, broad jump, and pole vault, only the one-eighth inch indoor board spike has been used and this has provided proper footing. Any longer spike won't penetrate its full length and will excessively tear up the mat. The remaining field records are 6 feet 6½ inches in the high jump, 25 feet 5½ inches in the broad jump, and 14 feet 5/16 inches in the pole vault.

The cost per square foot hasn't been covered here, as it will vary in the different sections of the country. Our cost of 54¢ per square foot included the digging, rock base, binder, and top surface. Whatever the cost is for your respective area, I'm sure it will be reasonable when all the advantages are considered.

Since repair hasn't been a prob-

lem to date, it will have to be covered at a later date. It's easy to scrape off a worn area of the top surface and replace it. This won't be necessary for an over-all area, as the worn spots are small.

The asphalt-top surface is superior to any clay or cinder type surface. It eliminates the unfair advantage of having two separate surfaces for the same event to satisfy competitors. The indifferent competitors will be convinced of this, if they'll give the mat a chance to prove its worth.

If you don't have all-weather asphalt surfaces, make a point to talk to athletes and coaches who have made the change.

Equipment Care

(Continued from page 26)

have parents cooperate in the cleaning chore. If the latter method is followed, provide explicit instructions on washing methods so pieces won't be ruined.

Whatever method is selected, some arrangements must be made. Sanitation alone prohibits a player from wearing the same practice jersey, sweat shirt, or pair of pants for a whole season.

8. Inventory equipment yearly. Note the date taken and results obtained on each item after the last recorded entry on the inventory cards. By doing this, your athletic budget will always be efficiently handled and your team properly outfitted.

9. Recondition equipment when season is completed. Don't leave dirty, sweaty, uniforms lying around. As soon as a season ends, arrange for cleaning and repairing. Following this, store systematically. If not soon cared for, some of the items will rot and the rest won't be ready when needed.

10. Keep accurate records. They must be clear, concise, and simple. Don't use any that require special interpretation. Equipment belongs to the school. You're only its keeper. Treat it as such.

To the public's eye, the coach is the builder of a team. This is interpreted only in the sense of winning or losing.

But coaches should remember that they're also businessmen, with certain responsibilities of organization and management. The problems in handling thousands of dollars worth of equipment are complex. Wise are they who realize this and plan with great care the accounting and handling of this equipment.

Your New Gym Deserves THIS SCOREBOARD



The new MT-250 is worthy of installation in the finest gymnasiums being built today.

Spectators, Players, Coaches and Officials all appreciate the appearance and performance of the Newest board in our line. If you can afford the BEST, then the MT-250 is the board you will want.

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GREENVILLE, ILLINOIS

BUILDERS OF THE BEST SINCE 1934



No. 42 GHS STEEL HURDLE

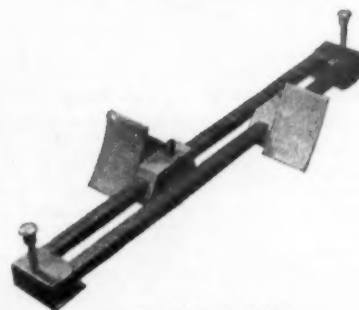
Johnson Trackmaster Starting Block

- Finger Tip Setting
 - Lifetime Aluminum Pedals
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 - Positive Action

SCHOOL PRICE \$27.00

OTHER STARTING BLOCKS

No. 1 SR Nicholson Senior	\$21.30
No. 2 JR Nicholson Junior	16.45
No. BSB Blue Streak	15.90



No. 1TSB STARTING BLOCK

GILL

No. 42 GHS

The Official High School "Safety Hurdle"

- Rugged Tubular Steel
- Spring Snap Lock Adjustment
- Welded Permanent Weights
- Official 6 and 8 lb. Pullover
- Telescope for Easy Storage

SCHOOL PRICE \$18.65

THE HARRY GILL Co.

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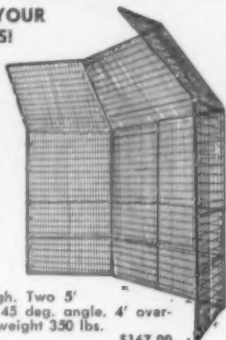
URBANA,

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REGULATION BASEBALL FIELD OR SOFTBALL DIAMOND . . .

There's an AALCO BACKSTOP TO FIT YOUR NEEDS!

Sloping over-
hang provides
same protection
as a conven-
tional backstop
two to three
feet higher.
Framework of
galv. pipe, tube
and fittings.
Galv. wire
mesh. Easy to
install. Instruc-
tions furnished.



No. ABSO-B—
10' wide, 8' high. Two 5'
wings stand at 45 deg. angle. 4' over-
hang. Shipping weight 350 lbs.
F.O.B. St. Louis \$167.00
No. ABS-B—Same as above but without over-
hang. Shipping weight 300 lbs.
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LARGER SIZES MADE TO ORDER
Send Details for Prices

BASEBALL — SOFTBALL AND LITTLE LEAGUE BASES

New improved 1950 line. Ruggedly built to last
longer and save you money. You get exceptional
wearing qualities because Aalco Bases are made
of heavy Belting Duck with reinforced strap
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assure unequalled performance.

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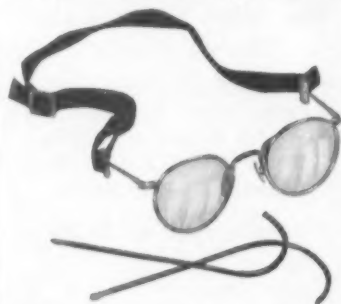
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**Precision Built — Shock Resistant
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They're built to withstand rugged wear and
hard knocks. Lenses are ground to the exact
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finest optical glass, then case-hardened to
meet Gov't. Standards for safety. Full vision
—comfortable—rigid.

Lenses are set in frame of non-corrosive white
metal, with elastic head band for players or
conventional temples for coaches and officials.
Truly they're "tops" for practice or games.
When ordering, send prescription and size of
present lenses. Allow 5 days for delivery.

\$21.75 per pair

Free brochure on request

PRECISION ATHLETIC GOGGLE CO.

Dept. 457-A, Rochelle, Ill.

Field of View

(Continued from page 9)

Central shower room with tiled
walls and floor and 5 Bradley
shower units.

Equipment issue and storage
rooms with adjustable shelving
throughout, and equipment racks
and hangars for game equipment.

Drying room with roof ventilator,
and racks and equipment hangars
for game equipment.

Chalk and bulletin boards in all
dressing rooms and coaches' office,
and main hall.

Coaches' office with accommoda-
tions for 14 coaches, with toilet and
shower facilities. Plate-glass win-
dows in the walls of the office to
facilitate supervision.

Training room adjacent to the
coaches' office. Three plastic-cov-
ered, foam rubber-padded training
tables, hot and cold water, sink,
medical cabinets, heat lamp and 2
stainless steel whirlpools.

Officials' room with toilet and
showers, at the opposite end of the
building from the dressing rooms.

Dressing rooms, with accommoda-
tions as follows: Varsity—55; Soph-
omore—85; visitors—45; track—25.
Visitors' room with separate toilet
facilities.

Intercom system in building with
record player. Microphones at equip-
ment counter and in coaches' office.

Aluminum windows with translu-
cent glass, above head height, pro-
vide light around the entire building.

All floors slope to a floor drain in
the middle of each room, so they
can be washed down easily after a
preliminary sweeping.

The Game Football Field is cen-
tered on the area inside the running
track. The field has a 15-inch crown
running down the center and slop-
ing off uniformly to the curve of the
track at both ends.

A Skinner underground watering
system is installed under the game
field. The field was sodded in June
1957, and had 14 games played on
it that fall. Fertilizing and reseeding
were accomplished last spring and
20 games played on the field this
fall.

Underground drainage was speci-
fied originally but later ruled out
because of the underlying ground
structure. Under the entire field
area is a layer of granite from three
to four feet below ground level,
which is covered with a layer of
coarse sand and clay. Soil pipe
drainage was planned but costs
proved prohibitive. No drainage
problems have been encountered to
date.

First Annual

NATIONAL CAPITAL FOOTBALL CLINIC

Washington, D.C., Sheraton-Park Hotel

MARCH 2-3-4-5, 1959

Your Host—Touchdown Club of Washington,
D. C. America's No. 1 Football Organization

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Registration Fee: \$30.00

Washington has many types of entertainment
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Processed and returned same Day

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Athletic Special: DuPont 16 mm. Hi-Speed
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Arrange today for service. Send for prices.

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AUTOMATIC IRRIGATION

"Set it and Forget it"

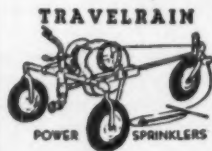
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signed for Ath-
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Waters areas up
to 100 x 600 ft.
in one setting.

Only 10 minutes
to set or removal

Pulls itself along
thru winding up
a steel cable—

Water Powered—
Shuts off water
automatically.



Write for information and free trial offer

TRAVELRAIN

362 N. Canon Drive, Beverly Hills, California
Established 1935

The practice area consists of three regulation football fields within 75 yards of the service building. A one and one-half inch water line runs between these fields and a Travel-rain sprinkler is used to water all three fields.

The game field is lighted by 208, 1,500-watt lamps, mounted on six 90-foot tubular welded steel poles. The two center poles are on the 50-yard line, mounted on the third row from the top of the stands, so that they rise about 130 feet in the air. These two poles were so located as an economy measure and do not interfere with sight lines from the press box.

Lights were assembled with the poles on the ground, in accordance with pre-designed lighting charts, and raised into place by a crane. Center poles were lifted over the back of the grandstands. The center poles are 133 feet from the football field, and the end poles 85 feet from the sidelines.

Lighting on the field is about 40 foot candles. Separate lighting charts were provided for football and track meet lighting.

EQUIPMENT SUPPLIERS

P. A. System—RCA

Football Scoreboard—Fair Play

Laundry Equipment—American
Laundry and Machinery

Lockers—All Steel Equip. Co.

Whirlpool Baths—Ille Electric

Pre-Cast Seat and Risers—Varsity
Pre-Cast Seat Co.

The Track was built over a two-year period. It was started in the fall of 1956 with the excavation of the entire track to a depth of 24 inches and the pouring of the concrete curb, 4 inches thick and 24 inches deep, around the inside and outside of the entire track. The top layer was put on the track in the late fall of 1957.

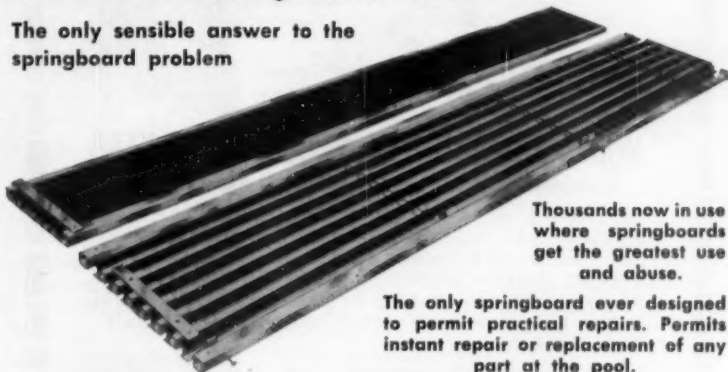
Prior to the first freeze in 1956, a base course of very coarse gravel 15 inches deep was laid in and made as nearly level as possible. During the spring and summer of 1957, construction trucks and heavy equipment drove on this base course while completing the stands and the football field.

Early in the summer of 1957, a layer of coarse Sioux Falls granite, an inch to an inch and one-half size, was laid in to a depth of about three inches. This was leveled with a light road patrol and was driven on the

THE PERMANENT MULTI-UNIT ALUMINUM BUCKBOARD

Makes all other diving boards obsolete

**The only sensible answer to the
springboard problem**



Thousands now in use
where springboards
get the greatest use
and abuse.

The only springboard ever designed
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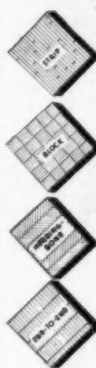
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Community Skating in a Wisconsin high school gym

The kids don't know—but you do—the only right floor for Multi-Purpose Room or Gym—only real floor for basketball, gymnastics, dancing—is MAPLE—resilient, springy, easy-on-the-feet—and DIAMOND HARD resistant to dents.

IF Funds are tight—

Before you bow to substitutes, suggest—"Why not community skating?—Let the gym pay for itself—Other schools do"—Remember, roller skating can't hurt J. W. Wells DIAMOND HARD Northern Maple floors.

For More on Money-Making Gyms—Write—

MORE BOUNCE PER OUNCE — LESS DENTS MAKE SENSE



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J. W. WELLS
LUMBER COMPANY**

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Phone UNION 3-9281
Member, Maple Flooring
Mfrs. Assn.

Olympic
Champion
Bob Richards,
Director of the
Wheaties
Sports
Federation



Win a COMMUNITY RECREATION KIT!

Join the Wheaties Sports Federation's YOUTH FITNESS IDEA SEARCH

As its newest project to help stimulate increased interest in youth fitness, the Wheaties Sports Federation will award 150 Community Recreation Kits. Your organization can be a winner! We want your ideas: "WHAT CAN THE WHEATIES SPORTS FEDERATION DO TO PROMOTE YOUTH FITNESS?" Rules of the Youth Fitness Idea Search are on specially marked New Wheaties packages, at your grocer's now. Or write for rules to: General Mills, Box 111, Minneapolis 60, Minnesota

Community Recreation Kits consist of:

47-piece Harry Gill Junior Champ Set—track and field equipment scaled to size for youngsters.

PLUS... 2 Voit footballs 1 Voit basketball
1 Voit volleyball 1 Voit soccer ball
2 Voit softballs 2 Louisville Slugger bats



remainder of the summer.

In mid-October, cinders obtained from the local utilities company were spread on and leveled by light road patrol to a depth of two inches. These cinders were relatively coarse and were not screened. As the final or top layer, cinders from our old track, which had been sifted to remove the coarse granite mentioned above were laid in to a depth of three inches. This layer was put on in the same manner as previous layers and leveled by the light road patrol.

No binder was added as this material came from a 20-year-old track which was very fast and had accumulated a certain amount of dirt and clay from a baseball field run-off at our old field.

After this top layer was leveled, a multi-wheel road packer was used to pack the track before the fall freeze. This wasn't accomplished as carefully as would be desired, and necessitated considerable extra work in the spring to level the track properly from curb to curb.

Driving on the sub-courses was beneficial in that a considerable amount of packing was accomplished, and little if any settling was noted in the spring of 1958 when the track thawed.

Several features of the curb are noteworthy. Concrete sections 25 feet long were used, with two steel expansion bars 18 inches long sliding in pipe sleeves at each joint.

The curb is 4 inches thick by 24 inches deep, with the inside top edge slightly rounded. It incloses the whole track inside and outside and the ends of the straightaways.

As the track was poured, brass plates 6 inches by 2½ inches, with two long hooks on the under side, were installed flush with the top of the curb to mark all starts, finishes, hurdle marks, and relay offsets.

Inch letters were scored on the plates prior to installation to indicate what the mark was, and a large dot drilled at the exact point to be marked. Where two marks fall at the same point, tags are placed end to end, and the line between them is the point to be marked. We believe our marking problem is solved permanently.

The track is laid out on a 106-foot 6-inch radius, and has eight 42-inch lanes, with the inside lane 46 inches. There is a 250-yard straightaway on one side and a 150-yard straightaway on the other.

Drainage is handled by dry wells dug under the inside and outside curbs of the track at 60 foot intervals, and filled with coarse Sioux Falls granite. These wells are approximately 10 feet by 10 feet, and

DOWMETAL Crossbars

These triangular hollow bars are the truest, most practical, longest lasting crossbars on the market.

Now more popular than ever

- Official ● Long Lasting
- Less Sag ● Uniform ● Safe

Metal is patented magnesium alloy especially suited to bending.

WEIGHT AND PRICE

12' (jumping)	2.0 lbs.	\$5.95
14' (jumping)	2.3 lbs.	6.70
16' (vaulting)	2.6 lbs.	7.45
18' (vaulting)	3.0 lbs.	8.20

Transportation charge extra.

• More crossbars sold last year than ever before showing increased popularity.

Write for name of dealer nearest to you

K. & P. Athletic Co.

1115 Jerome St.

Midland, Michigan

5 feet deep, to afford quick drainage of surface water down to sub-ground granite level.

Pole vault and broad jump runways are black top in accordance with Purdue University specifications. Runways are 128 feet long and 5 feet wide with 1-inch Redwood siding framing the entire length and ends. The vaulting pit is on the 50-yard line, with broad jump pits at the ends of the football field.

The vaulting pit is 14 feet by 12 feet, framed with Redwood plank, anchored in concrete. The pit is filled with a mixture of sawdust and shavings from a local millwork plant. For meets, additional sawdust and shavings are banked up inside gunny sacks filled with the same materials. The broad jump pits are 10 feet by 16 feet and filled with fine sand. They're also framed with Redwood planks anchored in concrete.

The high jump pit is 16 feet by 16 feet, framed with Redwood plank anchored in concrete and filled with fine sand. For meets, a canvas is placed over this sand and sawdust and shavings piled up inside bags of the same material.

Two arcs were inscribed in front of two adjacent sides of the pit, using a 25-foot 6-inch radius, and this area was then black-topped in accordance with Purdue University specifications.

Discus pads are 12 feet by 12 feet concrete, 4 inches thick, laid on a sandbase, with throwing circles painted on.

The shot pad is 12 feet by 12 feet concrete, 4 inches thick on sand base. The throwing circles are painted on the pad 10 feet apart. A shot return 40 feet long was constructed from 3 inch angle iron in 10 foot sections, mounted on steel posts which slide into pipe sleeves set in concrete.

Filling YOUR Seating Needs . . .

to your best advantage. That's our job. We enjoy it. And we have the Earlville line of bleachers and grandstands to do it well.

Want help in planning, with no obligation? Write Dept. A . . .



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- ☐ Catalog of Complete Sports Line

AIR PAD & BRACE (67)

- ☐ Catalog on Heavy-Duty Knee Brace, Adjustable Ankle Brace, Shoulder Pad

ALUMINUM ATHLETIC (57)

- ☐ 1959 Catalog of Hurdles, Crossbar, Standards, Vaulting Poles, etc.

AMERICAN PLAYGROUND DEVICE (32)

- ☐ Catalog of Dressing Room Equipment
- ☐ Catalog of Playground Equipment
- ☐ Catalog of Pool Equipment

AMERICAN WIRE (70)

- ☐ Folder on Locker Baskets and Uniform Hanger

ARNETT, RICHARD W. (17)

- ☐ Information on Arnett Starting Blocks

AUSTIN-CEDAR (68)

- ☐ Information on Basketball Backstops

AUSTIN FENCE (69)

- ☐ Catalog on Athletic Field and Gym Equipment

A-V MOTION PICTURE SERVICE (64)

- ☐ Information on Speedy Film Processing

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- ☐ Information on Portable "Water Caddy"

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- ☐ Catalog on Multi-Person Showers and Wash-fountains

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- ☐ Catalog of Scoremaster Electric Scoreboards

BUCK MFG. (77)

- ☐ Information on Multi-Unit Aluminum Diving Board

CHICAGO ROLLER SKATE

- (Inside Back Cover)
- ☐ Details on Roller Skating Programs and Equipment

CINE-O-TONE (76)

- ☐ Information on Speedy Film Processing

COACHING SCHOOLS

- Further information on
 - ☐ Dixie Clinic (64)
 - ☐ National Capital Football Clinic (76)
 - ☐ National Football Clinic (48)

COSOM (45)

- ☐ Booklet, "26 New Games for Safe Indoor and Outdoor Play"

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- ☐ Details on Basketball Stance-Master Device

DU PONT (47)

- ☐ Data on High Speed Motion Picture Film

EARLVILLE BLEACHER (79)

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- ☐ Information on Speedy Film Processing

FEISE (73)

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- ☐ Catalog on Gym-Master Line of Trampolines (See adv. for special offer.)

GENERAL MILLS (78)

- ☐ Rules on Youth Fitness Idea Search

GILL, HARRY (75)

- ☐ Information on Safety Hurdle and Starting Block

GYMNASTIC SUPPLY (64)

- ☐ Catalog on Gymnastic Apparatus

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- ☐ Table Tennis Tournament Kit

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- ☐ Louisville Slugger Catalog
- ☐ Softball Rules Booklet
- How many _____

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- ☐ Scouting & Scoring Book
- How many _____
- ☐ Literature on Trophy Finish

HUNTINGTON LABS. (43)

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- ☐ Manual, "How to Sweep and Mop Floors"

IVORY SYSTEM (Back Cover)

- ☐ Monthly Bulletin, "The Observer"

JAYFRO ATH. SUPPLY (72)

- Catalog on
 - ☐ Steel Chain Nets
 - ☐ Tetherball Sets
 - ☐ Aluminum Standards

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 - ☐ Basketball Backstops and Scoreboards
 - ☐ Locker Room Equipment
 - ☐ Gymnasium Apparatus

NADEN (58)

- Electric Scoreboards and Timers
 - ☐ Baseball Catalog
 - ☐ Basketball Catalog
 - ☐ Football Catalog

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- ☐ Price Circular on Jim-Flex Gym Mats
- ☐ Circular on Floor and Wall Mats and Covers, Baseball Bases

NEVCO SCOREBOARD (75)

- ☐ Bulletin on Electric Scoreboards

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- ☐ Practice Pant
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- ☐ Foul Indicator
- ☐ Magnetic Coaching Kit
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- ☐ Baseball Trainer

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- ☐ Arcata H. S. Trampoline Program

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- ☐ Brochure on Non-Shattering Athletic Glasses

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- ☐ List of Sports Books

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SPALDING & BROS. (39)

- ☐ Catalog

SPOT BILT DIV. (49)

- ☐ Catalog of Track Shoes and other Shoes

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- ☐ Literature on Automatic Power Sprinkler

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- ☐ Information on School Laundry Equipment

UNION METAL (55)

- ☐ Catalog on Monotube Floodlighting Poles

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- ☐ Information on Ensolite Protective Athletic Equipment

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SCHOOL _____ ENROLLMENT _____

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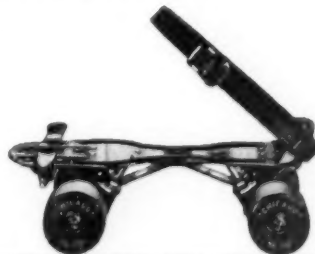
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